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## Maple Avenue, Crowle

EXTENDED PHASE 1 HABITAT SURVEY
June 2015

| | Staff Member | Position |
|---|---|---|
| Extended Phase 1 Habitat Survey : | Dan Lombard BSc MCIEEM | Ecologist |
| Report prepared by : | Chris Toohie MSc MCIEEM<br>Dan Lombard BSc MCIEEM | Ecologist |
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| **Notes.** | **This report contains sensitive information concerning protected species and caution should be exercised when copying and distributing to third parties.** | |

# Table of Contents.

## 1.0 EXECUTIVE SUMMARY.

1.1 In June 2015, Wold Ecology was commissioned by WCEC Architects to undertake an Extended Phase 1 Habitat Survey on land adjacent to Maple Avenue, Crowle (national grid reference SE 77243 12423) in North Lincolnshire.

1.2 In order to accomplish the brief, a desk top study, consultation and an extended Phase 1 field survey was undertaken by Wold Ecology staff.

1.3 The habitats within the Application Site comprise improved grassland, bare ground, buildings and fencing. There are no statutory or non statutory sites within the site boundary.

1.4 The proposed development involves site clearance and the erection of a small number of residential dwellings with associated infrastructure.

1.5 The surrounding habitat is potentially important and the development area may impact upon mobile species. Consequently, the extended phase 1 assessment targeted the following species relevant to the Application Site and proposed development:

- Bats
- Great crested newts
- Badger
- Birds
- Reptiles
- Hedgehogs

1.6 The ecological survey concludes that the proposed development is unlikely to impact upon any protected species or associated habitats. However, the report recommends a number of measures which should be adopted to ensure potential adverse impacts to wildlife are avoided:

- **Wold Ecology does not recommend any further specific bird surveys. However, any trees and vegetation to be removed should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between September and February inclusive) or be carefully checked by an ecologist to confirm no active nests are present - prior to removal during the summer period. If nesting birds are found during the watching brief, works will need to stop until the young have fledged.**

1.7 The data collected to support the output of this report is valid for 18 months. This report is valid until **November 2016**. After this time, additional surveys need to be undertaken to confirm that the status of the site, for European protected species, has not changed.

1.8 Species list within this report may be forwarded to the local biodiversity records centre to be included on their national database. No personal information will be sent. Please contact Wold Ecology if you do not wish the species accounts and six figure grid references to be shared.

## 2.0 INTRODUCTION

2.1 In June 2015, Wold Ecology was commissioned by WCEC Architects to undertake an Extended Phase 1 Habitat Survey on land adjacent to Maple Avenue, Crowle (national grid reference SE 77243 12423) in North Lincolnshire.

2.2 An ecological assessment is a requirement of the Local Authority Planning Department, as part of the planning application process. This is specified in the following legislation:

- Department for Communities & Local Government Circular 06/2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.
- National Planning Policy Framework (NPPF): Biodiversity and Geological Conservation – national planning policy relation to biodiversity. NPPF Biodiversity and Geological Conservation gives further direction with respect to biodiversity conservation and land use change/development. NPPF states that not only should existing biodiversity be conserved but importantly that habitats supporting such species should be enhanced or restored where possible. The policies contained within NPPF may be material to decisions on individual planning applications.

2.3 In addition, an ecological assessment is also required so that the local authority comply with the Habitats and Species Regulations 2010 and to have regard to the purpose of conserving biodiversity in the exercise of their functions (Natural Environment and Rural Communities (NERC) Act 2006).

2.4 Planning authorities must determine whether the proposed development meets the requirements of Article 16 of the EC Habitats Directive before planning permission is granted (where there is a reasonable likelihood of European Protected Species being present). Therefore in the course of its consideration of a planning application, where the presence of a European protected species is a material consideration, the planning authority must satisfy itself that the proposed development meets three tests as set out in the Directive.

2.5 The Local Authority must be satisfied that the proposed development must meet a purpose of:

a) 'Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'.

In addition the authority must be satisfied that:

(b) 'That there is no satisfactory alternative'

(c) 'That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

### 2.6 Case Law - Woolley v Cheshire East Borough, 5th June 2009.

2.6.1 The ruling states that if it is clear or perhaps very likely that the requirements of the Directive cannot be met because there is a satisfactory alternative or because there are no conceivable "other imperative reasons of over-riding public interest" then the authority should act on that and refuse permission."

2.6.2 In addition, the judgement also clarified that it was not sufficient for planning

authorities to claim that they had discharged their duties by imposing a condition on a consent that requires the developer to obtain a licence from Natural England. Natural England considers it essential that appropriate survey information supports a planning application prior to the determination. Natural England does not regard the conditioning of surveys to a planning consent as an appropriate use of conditions.

2.7 In order to fulfil the brief, the following has been undertaken:

- A desktop study and consultation.
- An Extended Phase 1 Habitat Assessment.

2.8 This report describes the findings of the field survey work, the desktop study and identifies further surveys to ensure that a comprehensive study is undertaken.

## 3.0 COMPANY PROFILE

3.1 Wold Ecology Ltd is a well-established, professional company whose staff has over 30 years' experience in providing a bespoke service for environmental management. Wold Ecology employs a number of experienced and qualified associates to undertake specialist survey work. Professional service is of primary importance and Wold Ecology only employs staff who can demonstrate knowledge and expertise to an exceptional standard.

3.2 Wold Ecology provides a wide range of specialised advice aimed at integrating business with nature. We specialise in ecological surveys, land management planning and site assessments, these include:

- **European Protected Species Surveys**
  Bats, Birds, Great Crested Newts, Water Vole, Badger, Crayfish and Fungi surveys. Phase 1 and Phase 2 NVC Habitat Surveys, Landscape Character Assessment and Environmental Impact Assessments.
- **Environmental Grant Applications**
  Natural England Higher Level Scheme, Farm Environmental Plans, English Woodland Grant Scheme and Heritage Lottery Funding, Breathing Places.
- **Land Management**
  Management Plans, Landscape Designs, Monitoring and Site Evaluation.
- **Practical Conservation.**
  Habitat Creation, Tree Planting, Maintenance Programmes and Access Management.

### 3.3 Ethical Policy.

3.3.1 Wold Ecology provides a dedicated countryside management service in compliance with all relevant Local Agenda 21 directives and Biodiversity Action Plans.

3.3.2 We aim to raise awareness of current environmental issues amongst our clients, including UK and European legislation, industry guidelines such as BREEAM/CODE and case studies.

3.3.3 We strive to deliver the highest standards of ecological assessment and management.

3.3.4 We aim to purchase, wherever possible, environmentally friendly products and services, in order to limit negative effects on the environment.

3.3.5 Wold Ecology is committed to working towards the conservation of our natural heritage. Wold Ecology support The Wolds Barn Owl Study Group, Driffield Millennium Green and RSPB projects with volunteer staff time and financial resources. Wold Ecology has adopted an important site for nature conservation on Flamborough Head. North Marsh is owned by a local farmer and is an integral part of an exciting Higher Level Stewardship Scheme, supported by Natural England and RSPB. Richard Baines and Chris Toohie have provided free advice and practical conservation work for nearly 10 years on this site. The recent work on the marsh and the return of scarce breeding birds, such as Corn Bunting, has given a huge sense of achievement for all concerned.

3.3.6 Wold Ecology is an Associate Member of the RSPB, Bat Conservation Trust

Benefactor and Corporate Member of the Yorkshire Wildlife Trust.

3.4 Surveyor Profile – Daniel Lombard B Sc., MCIEEM.

3.4.1 Job title : Senior Field Ecologist.

3.4.2 Expertise.

- Phase 1 habitat field surveys and biodiversity assessments including Building Research Establishment Environmental Assessment Method (BREEAM) and Code for Sustainable Homes (CODE) assessments.
- Bat surveys, bats and wind turbine assessments, bat sound analysis and monitoring.
- Great crested newt and reptile surveys.
- Mammal surveys including water vole, otter and badger.
- Management planning, pond and wetland management.

3.4.3 Qualifications.

- B Sc. Environmental Science.
- Great Crested Newt License – CLS01634
- Bat License – CLS01634

3.4.4 Professional Membership.

- Member of the Chartered Institute of Ecology and Environmental Management.

3.5 A detailed surveyor profile is included in Appendix 5.

3.6 Daniel Lombard meets the criteria for a suitably qualified ecologist by:

- Holding a Bachelor of Science degree (hons) in Environmental Science;
- Being employed as a practising ecologist since 2007, with over 5 years relevant experience (within the last five years) and;
- Being a full member of the Institute of Ecology and Environmental Management (this makes him subject to peer review and bound by a professional code of conduct).

3.7 Chris Toohie M Sc. MCIEEM has read and reviewed the report and confirms that it:

- Represents sound industry practice
- Reports and recommends correctly, truthfully, and objectively
- Is appropriate, given the local site conditions and scope of works proposed
- Avoids invalid, biased, and exaggerated statements

## 4.0 SURVEY METHODOLOGY.

4.1 A Phase 1 Habitat Survey was undertaken on 1st June 2015. During the site visit, the whole of the Application Site and accessible neighbouring land was examined in detail.

| Survey | Date | Time | | Wind Speed | Wind Direction | Temperature | | Rainfall | Cloud Cover |
|---|---|---|---|---|---|---|---|---|---|
| | | Start | Finish | | | Start | Finish | | |
| **Field** | 01/06/2015 | 16.00 | 17.45 | 15mph | W | 15°C | 12°C | None | 100% |

4.2 The habitats within the Application Site were mapped (see Appendix 2) according to the techniques described in the publication *Handbook for Phase 1 Habitat Survey* (JNCC 2010).

4.3 Target notes (if applicable) provide descriptions of the main habitats found on the site, including information about species composition, habitat structure, evidence of management, habitats too small to map and transitional or mosaic habitats.

4.4 Sufficient detail on the composition of the vegetation was obtained from the Phase 1 Habitat Survey, which enabled it to be successfully characterised and assessed.

4.5 During the site visit, notes were made of features of potential value to other groups such as birds, mammals, amphibians, reptiles or invertebrates, paying particular attention to species protected by law.

## 5.0 LIMITATION OF FIELD SURVEY.

5.1 Whilst the majority of the Application Site was examined at the macro scale, many species will have been overlooked at the micro level because it is not the purpose of a phase 1 habitat survey to classify all taxa occurring in the Application Site. In addition, whilst the actual timing of the survey was adequate to classify the habitat types, there is undoubtedly a strong seasonal element to the presence of species within the site and species occurring outside of the survey period will have been missed.

5.2 This report will serve to indicate the possible value of the site in nature conservation terms based upon the survey and desk top data gathered. As with any survey of this kind, it cannot be seen as a definitive description of the site and its associated habitats and species.

5.3 Access was only granted within the Application Site and land owned by the client; neighbouring land was only studied from vantage points, maps and aerial photography and it is possible that habitats important to the ecology of the Application Site may not have been recorded fully.

5.4 However, a phase 1 habitat survey of this nature, supported by a thorough desk top survey, is sufficient to make a number of general assumptions about the ecology of the site.

## 6.0 SURVEY RESULTS.

### 6.1 General Description.

6.1.1 The Application Site is situated along the southern boundary of Crowle, in a sub-urban location in North Lincolnshire. The Application Site comprises a flat, well drained parcel of rough grassland bounded by gardens and sub-urban housing. Tree cover within the immediate locality is poor and provided by singleton amenity trees within surrounding gardens.

6.1.2 Whilst the Application Site is located in a sub-urban environment, a rural agricultural landscape occurs within close proximity to the Application Site. Habitat connectivity is poor and fragmented by roads and buildings. No key habitats are linked directly to the Application Site which is largely surrounded by sub-optimum habitats. Woodland cover within 2km of Crowle is low and consists of plantations and avenues adjacent to farms and roads.

6.1.3 A summary of the surrounding habitat is as follows (radius of < 2km from the Application Site):

- Buildings – farm buildings and residential properties
- Caravan Parks
- Hedgerow
- Mature trees and woodland
- Arable
- Mature private gardens
- Ponds and watercourses
- Flooded Gravel Pits
- North Engine Drain
- New Godnow Drain
- Triangle Drain
- Old River Drain
- Moor Bottom Drain
- Browns Drain
- Bewcarrs Drain
- Sheffield and South Yorkshire Navigation Stainforth and Keadby Canal
- Grazed pasture

### 6.2 Desktop Study.

6.2.1 Natural England, Lincolnshire Environmental Records Centre and the National Biodiversity Network (NBN) were consulted in order to obtain any ecological information that they hold of relevance to the Application Site.

6.2.2 The desk top study identifies land parcels of nature conservation value within 2 km locality of the Application Site. Relevant extracts from associated documentation are highlighted below. The following data resources were searched:

- Sites of Special Scientific Interest (SSSI)
- Special Protection Areas (SPA)
- National Parks
- National Reserves

- Special Areas of Conservation (SAC)
- Ramsar sites
- Areas of Outstanding Natural Beauty (AONB)
- Local Nature Reserves (LNR)
- Local wildlife sites (LWS)
- Natural England Habitat Inventories
- Natural Area documentation
- European protected species records
- UK Biodiversity Action Plan habitats and species records
- Local Biodiversity Action Plan habitats and species records
- Notable species records

6.2.3 Statutory sites

6.2.3.1 The following SSSI's lie within 2 km of the Application Site;

| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| 1006873 | Hatfield Chase Ditches | Notified | 477073 | 410538 | 1.75 |

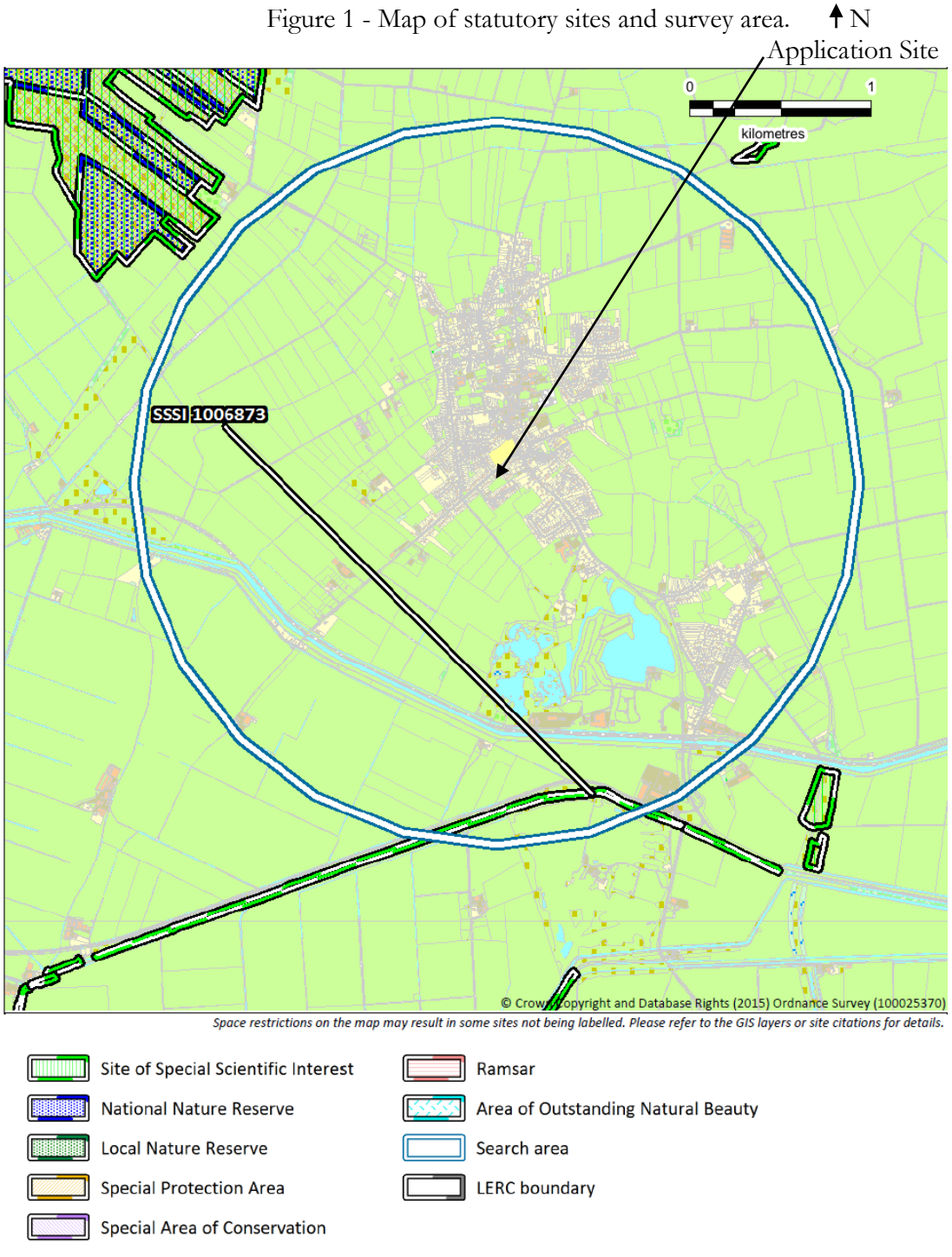
6.2.3.2 SSSI is described by Natural England (Date)

- Hatfield Chase is a large area of former marsh and wetland at the head of the Humber Estuary between Doncaster and Scunthorpe. The land has been extensively drained for agriculture, and is now split by a complex network of ditches. These ditches retain elements of the former marshland and now make up the majority of nature conservation interest in an intensively farmed arable landscape and a major element in the Humberhead Levels natural area. The drains are cut through a mixture of alluvial silts and sands, and in some areas peat soils derived from the former fens and mires. Some of the water feeding the system is acidic water from remaining raised mire areas.
- The site comprises three main ditch sections, the North Idle Drain, North Level Engine Drain and South Engine Drain, with some of their feeder ditches. These ditches hold water throughout the year and have a range of water depths. The ditches contain a rich assemblage of aquatic and emergent plants, typical of nutrient rich systems. The aquatic species are dominated by pondweeds, such as broad-leaved pondweed *Potamogeton natans*, fennel pondweed *Potamogeton pectinatus*, and common duckweed Lemna minor. Less common species include ivy-leaved duckweed *Lemna trisulca* and various-leaved pondweed *Potamogeton gramineus*. Intermediate water-starwort *Callitriche hamulata* and floating clubrush *Eleogiton fluitans* are found in some parts of the system, being more typical of acidic water.
- The emergent zone is very limited in some of the ditches, due to their steep banks, but stretches of the bank are dominated by tall reed species, such as common reed Phragmites australis, reed canary-grass Phalaris arundinacea and branched bur-reed *Sparganium erectum*. Other areas are dominated by sedges, mainly greater pond sedge *Carex riparia* and tufted sedge *C. elata*, but also including false fox sedge *C. otrubae* and lesser pond sedge *C. acutiformis*.
- The banks of the ditches are very variable in vegetation, being dominated by common grasses and herbs, but include patches of common meadow-rue Thalictrum flavum, purple loosestrife *Lythrum salicaria* and meadowsweet *Filipendula ulmaria*. Other parts are dominated by scrub and there are some areas of heath vegetation dominated by gorse *Ulex europaeus* or broom Cytisus

scoparius.

- Some invertebrate studies have been carried out, the most interesting records being an assemblage of four reed beetles, including *Donacia clavipes* which is associated with common reed, and *D. simplex*, both of which are nationally scarce. The ditches also support a population of water vole *Arvicola terrestris*.

Figure 1 - Map of statutory sites and survey area.



6.2.4 Local Wildlife Sites (LWS).

6.2.4.1 The following local wildlife sites lie within 2 km of the Application Site;

| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| 370 | Hatfield Waste Drain | Selected LWS | 475892 | 409041 | 1.77 |
| 563 | New Godnow Drain West | Selected LWS | 475892 | 411761 | 1.43 |
| 600 | Old Dun Drain | Selected LWS | 475171 | 410794 | 1.53 |
| 743 | Stainforth and Keadby Canal Corridor | Selected LWS | 476228 | 411532 | 1.23 |

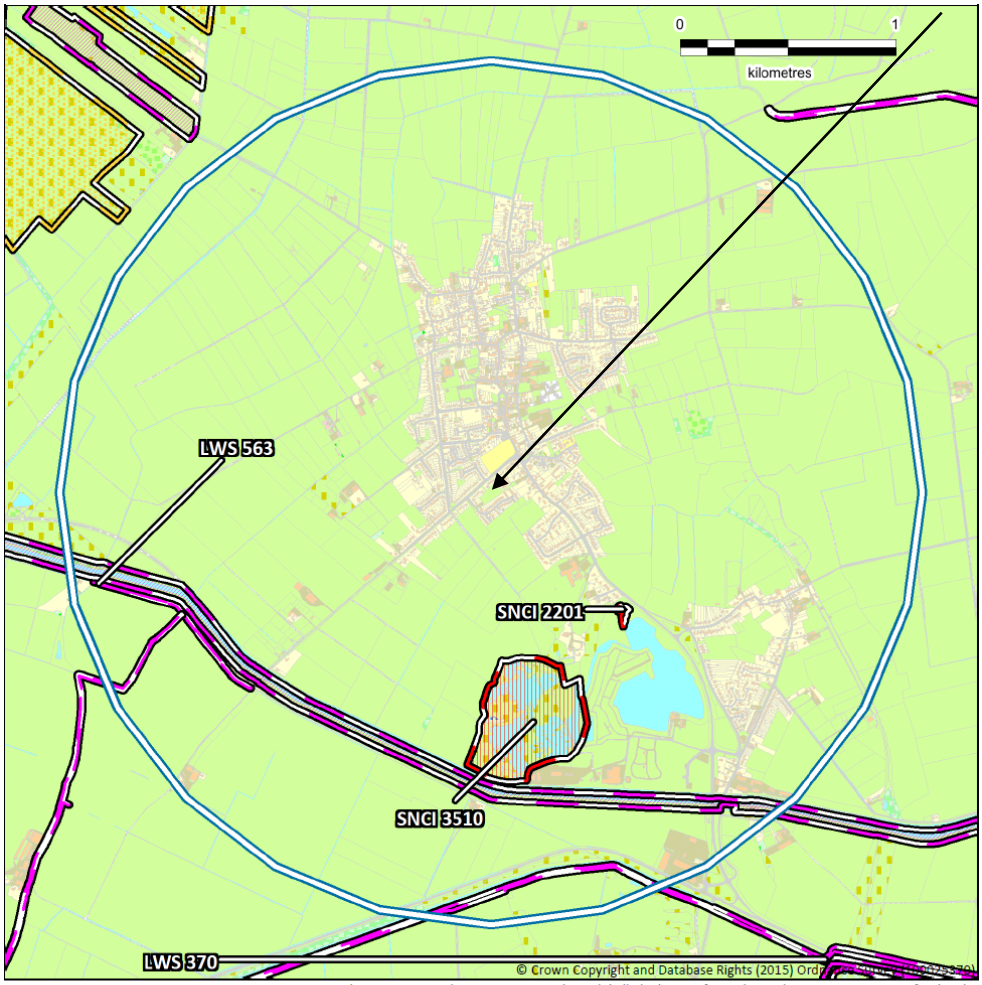
6.2.5 Sites of Nature Conservation Interest (SNCI's)

6.2.5.1 The following Sites of Nature Conservation Interest lie within 2 km of the Application Site;

| CODE | NAME | STATUS | EASTING | NORTHING | DISTANCE |
|---|---|---|---|---|---|
| 2201 | Tetley Pits, Ealand | Notified SNCI | 477856 | 411852 | 0.79 |
| 3510 | Crowle Brick Pits | Notified SNCI | 477410 | 411370 | 0.77 |

Figure 2 - Map of non-statutory sites and survey area. N

Application Site




6.2.6 Natural England Habitat Inventories

6.2.6.1 All the Natural England Habitat Inventories were searched, including the woodland inventory and grassland inventory. No areas of notable habitat from the Habitat Inventories list were found within 2 km of the Application Site.

## 6.3 Natural Character Areas

6.3.1 National Character Areas (NCAs) divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries, making them a good decision making framework for the natural environment. As part of its responsibilities in delivering the Natural Environment White Paper, Biodiversity 2020 and the European Landscape Convention, Natural England is revising its National Character Area profiles to make environmental evidence and information easily available to a wider audience.

6.3.2 NCA profiles are guidance documents which will help to achieve a more sustainable future for individuals and communities. The profiles include a description of the

key ecosystem services provided in each character area and how these benefit people, wildlife and the economy. They identify potential opportunities for positive environmental change and provide the best available information and evidence as a context for local decision making and action.

6.3.3 The Application Site falls within the Natural Character Area 39: The Humberhead Levels. The following Statements of Environmental Opportunities from NA 39 relate to the Application Site/proposed development:

- **SEO 3**: Manage the landscape features such as semi-natural habitats and historic field patterns that reveal local variations in landscape character, often arising from underlying soils and history of drainage, to enhance people's understanding and enjoyment of the landscape.
- **SEO 4**: Protect the open and expansive character of the landscape, its cultural features and sense of remoteness, by ensuring that new development is sensitively located, accommodates green infrastructure, retains long views and makes a positive contribution to biodiversity.

## 6.4 Natural Areas

6.4.1 Natural Areas are a way of looking at the natural environment around us. Using specialist knowledge of wildlife and natural features, English Nature has identified over 140 areas, covering the land surface and coast of England, each of which can be characterised by its unique combination of wildlife, landform, land use and human history. The boundaries of these Natural Areas often vary from existing administrative boundaries and provide the framework for much of English Nature's work, and are key to achieving, enabling and promoting nature conservation in England. Natural Areas define local needs in light of national priorities, also providing a focus for Local Biodiversity Action Plans. The Application Site lies within Natural Area 22 – The Humberhead levels.

### 6.4.2 Natural Area 22 – The Humberhead levels (as described by English Nature 1997).

6.4.2.1 This totally lowland Natural Area encompasses the open flat plain dominated by the major river systems of the Ouse and Trent which feed the western end of the Humber Estuary. Parts are now below sea-level, and are maintained as agricultural land by pumping. The Isle of Axholme, as the name suggests, stands uniquely out above the otherwise flat land. The Natural Area contains a patchwork of fields, some small, some large, bounded by dykes and occasionally by hedgerows. At the heart there is a peaty wilderness, internationally important for its nature conservation features, and renowned for its specialised plants and animals.

6.4.2.2 Doncaster, Selby and Goole are the main urban areas, the remainder of the Natural Area being sparsely populated with small towns, villages and isolated farmhouses. The cooling towers of the power stations provide a strong visual impact above the flat ground.

6.4.2.3 Farming patterns develop according to the geology, shape of the land and climate. While climate and shape of the land is reasonably uniform, with the possible exception of the Isle of Axholme, the varying distribution of the Lake Humber clays and the alluvial deposits provide the loose division between grasslands and arable

fields. There is a broad north-south split in which grasslands and small hedge-lined fields are more common in the northern half. To the south, fields are larger, hedges few, and cash-crops are grown.

6.4.2.4 Hedgerows once formed a chequerboard pattern across the open landscape. Many of these have now been removed as they impede the progress of large machines and are expensive to maintain. However, they are still fairly common north of Doncaster on the Lake Humber clays, where the landscape is on a smaller scale and has a more enclosed feel. The hedges are generally of hawthorn, which provide a welcome fragrant display of creamy white flowers in springtime. This provides an important early nectar source for insects such as bees. A crop of red berries follows which supplement the diet of some birds in autumn and winter. They provide corridors along which little owls and barn owls hunt in search of voles and mice.

6.4.2.5 Unimproved grasslands, with their flowers and birds, and blossom covered hedgerows are now rare. It is arable farming which dominates, taking advantage of the fertile alluvial soils. These fields are now well drained as a result of extensive pumped drainage systems. The methods used to cultivate these fields offer little space or time for the survival of wildlife. What remains is largely confined to the drainage channels and ditches, providing water is present throughout the year and that the management is favourable.

6.4.2.6 Ponds are particularly important for amphibians, especially the great crested newt. The adult newt spends most of its time hunting for insects on the land but needs water to lay its eggs. These are laid on the leaves of pondweed such as alternate water milfoil and various leaved pondweed. The rarer horned pondweed and whorled water milfoil are also found within the ponds of the Natural Area.

6.4.2.7 Relevant Natural Area Objectives.

- To re-establish the wetlands and other natural features of the Natural Area in locations chosen to enhance existing sites, and which correspond to natural wetland succession.
- To ensure the survival and prosperity of characteristic habitats (e.g. wetlands, heathlands, woodlands, grasslands), and plants and animals found in the Natural Area, both the rare and the common.
- Achieve sustainable use of water, at levels which enable wetlands to survive and prosper.
- Encourage landowners, users and others of influence to be proud and protective of the natural features for which the area is so special.

## 6.5 European Protected Species records

6.5.1 Badger *Meles meles* is recorded in the surrounding 10km grid squares SE70 & SE71 (source – Lincolnshire Environmental Records Centre and NBN Gateway 2015).

6.5.2 Bats

- Currently, there is no pre-existing information on bats at the site.
- Data for the 10km grid squares SE70 & SE71 shows records of brown long-eared bat *Plecotus auritus*, noctule *Nyctalus noctula*, Daubenton's bat *Myotis daubentonii,* whiskered bat *Myotis mystacinus,* soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* (source – Lincolnshire Environmental Records Centre and NBN Gateway 2015).

6.5.3 Great crested newt *Triturus cristatus* is recorded is recorded in the surrounding 10km grid squares SE70, at Belton Brickworks (>5km south) and Thorne Warping Drain (>5km north west) (source – Lincolnshire Environmental Records Centre and NBN Gateway 2015).

6.5.4 Water vole *Arvicola amphibious* is recorded in the surrounding 10km grid squares SE70 & SE71 (source – Lincolnshire Environmental Records Centre and NBN Gateway 2015).

6.5.5 Otter *Lutra lutra* is recorded in the surrounding 10km grid squares SE70 & SE71 (source – Lincolnshire Environmental Records Centre and NBN Gateway 2015).

6.5.6 Grass snake *Natrix natrix,* adder *Vipera berus* and common lizard *Zootoca vivipara* is recorded the surrounding 10km grid squares SE70 & SE71 (source – Lincolnshire Environmental Records Centre and NBN Gateway 2015).

### 6.5.7 UK Biodiversity Action Plan Species records

6.5.7.1 The following UK Biodiversity Action Plan species have been recorded within 2km of the Application Site:

- Kestrel *Falco tinnunculus*
- Black-headed gull *Chroicocephalus ridibundus*
- Herring gull *Larus argentatus* (BAP Species)
- Stock dove *Columba oenas*
- Swift *Apus apus*
- Swallow *Hirundo rustica*
- House martin *Delichon urbicum*
- Dunnock *Prunella modularis* (BAP Species)
- Mistle thrush *Turdus viscivorus*
- Fieldfare *Turdus pilaris*
- Song thrush *Turdus philomelos* (BAP Species)
- Redwing *Turdus iliacus*
- Starling *Sturnus vulgaris* (BAP Species)
- House sparrow *Passer domesticus* (BAP Species)
- Bullfinch *Pyrrhula pyrrhula* (BAP Species)
- Hedgehog *Erinaceus europaeus* (BAP Species)
- Common toad *Bufo bufo* (BAP Species)

### 6.5.8 Phase 1 Field Survey Results

6.5.8.1 The following habitat types were recorded within the Application Site:

- Scattered trees - A3.3
- Amenity Grassland - J1.2
- Fence J2.4/Wall - J2.5
- Buildings - J3.6
- Bare Ground - J4

6.5.8.2 Scattered trees

6.5.8.2.1 A number of young (less than 15 years old) singleton trees within private gardens exist around the periphery of the site, within 3m of the Application Site boundary. These include elder *Sambucus nigra*, Leyland cypress *X Cupressocyparis Leylandii*, hawthorn *Crataegus monogyna*, privet *Ligustrum vulgare*, Californian lilac *Ceanothus impressus* and sycamore *Acer pseudoplatanus*. The age, form and structure of the trees are currently not sufficient to support roosting bats or hole nesting birds. These trees are of limited value to interesting invertebrate communities due to the relatively low tree diversity. Saproxylic species are unlikely to be found in significant numbers due to the limited amount of dead wood. No associated floral communities were noted growing in conjunction with these trees.

6.5.8.3 Amenity grassland

6.5.8.3.1 The Application Site is dominated by neutral grassland which does not appear to have been managed over the previous growing season. This grassland appears to have originally been a small community football pitch. The sward is lush and is likely to have been amenity grassland which has recently fallen out of a regular cutting regime. Grasses include red fescue *Festuca rubra*, perennial ryegrass *Lolium perenne* and annual meadow grass *Poa annua*, with cocks foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus,* soft brome *Bromus hordeaceus*, upright brome *Bromopsis erecta* and false oat grass *Arrhenatherum elatius* growing in marginal areas. A low diversity of vascular plants grow between the sward, these are dominated by common ragwort *Senecio jacobaea*, broad-leaved dock *Rumex obtusifolius*, dandelion *Taraxacum officinale*, white clover *Trifolium repens*, stinging nettle *Urtica dioica*, ribwort plantain *Plantago lanceolata*, cow parsley *Anthriscus sylvestris*, cuckoo flower *Cardamine pratensis*, rosebay willowherb *Chamerion angustifolium*, smooth sow thistle *Sonchus oleraceus* and creeping buttercup *Ranunculus repens*. In addition, several dense stands of bramble *Rubus fruticosus* interspersed with hedge bindweed *Calystegia sepium* exist around the boundaries of the grassland. Species composition is suggestive of past improvements and nitrogen rich soils.

6.5.8.4 Fence/Wall

6.5.8.4.1 The surrounding gardens form the site boundaries which consist of a mixture of walls and fences with varying character. No of these are ecologically of any significance, however certain tight fitted walls/fences may inhibit dispersal of larger vertebrates and amphibians into and out of the site.

6.5.8.5 Buildings

6.5.8.5.1 Two rows of garages are present on site and comprise cement fibre board roofs, which are well sealed and currently intact. Reinforced concrete walls are tight fitting and have been pebble dashed. A wooden barge board occurs around the sides and backs of the garages, this is approximately 10cm off the wall and consequently is unsuitable for roosting bats. The garages all have metal doors which appear to be closed most of the time. Internally, the garages have a concrete base and are similar to their external structure. These buildings have low ecological value and are unsuitable for roosting bats and nesting birds.

6.5.8.6 Bare ground (hard Standing)

6.5.8.6.1 Bare ground areas comprise the tarmac site entrance road and access areas in front of the garages. Floral colonisation is at an early stage and is restricted to sporadic stands of groundsel *Senecio vulgaris*. These areas are not bio-diverse and subsequently have a low ecological value.

6.5.9 The following species were recorded during the field survey:

- Blackbird *Turdus merula*
- Great tit *Parus major*
- Blue tit *Cyanistes caeruleus*
- Starling *Sturnus vulgaris*
- House sparrow *Passer domesticus*
- Goldfinch *Carduelis carduelis*
- Woodpigeon *Columba palumbus*
- Collared dove *Streptopelia decaocto*
- Garden snail *Cornu aspersum*
- 7-Spot ladybird *Coccinella septempunctata*

6.5.10 The surrounding habitat is potentially important and the development area may impact upon mobile species. Consequently, the extended phase 1 assessment targeted the following species relevant to the Application Site and proposed development:

- Bats
- Great crested newt
- Badger
- Reptiles
- Birds
- Hedgehog

## 6.6 Bats

6.6.1 The bat survey involved an initial walkover of the Application Site to assess the overall habitat quality for bats. This included the identification of key potential foraging habitat and potential flight corridors. This survey also targeted any potential or actual roost sites and evidence of actual bat use i.e. droppings, feeding signs.

6.6.2 Trees were assessed for features associated with arboreal bat species, in this region predominantly Daubenton's bat, Natterer's bat, noctule, common pipistrelle, soprano pipistrelle and brown long-eared. Such features typically consist of:

- Woodpecker holes
- Trunk and bough splits
- Tear outs
- Flush cuts
- Wounds
- Cankers
- Dense ivy growth
- Dry knot holes
- Impact shatters
- Dense epicormic growth.

6.6.3 Buildings were also assessed for their potential to support bats, species typically associated with buildings in this region include common pipistrelle, soprano pipistrelle, brown long eared, Natterer's bat, whiskered bat and Brandt's bat. Buildings are more likely to support bats with the following features:

- Pre (or early 20th century)
- Agricultural buildings, built with traditional brick, stone and timber
- Buildings which have large and complicated roof voids with unobstructed flying spaces
- Large roof timbers with mortise joints, ridge beams, cracks and holes
- Entrances to fly through, like open doors and windows
- Poorly maintained internal fabric
- South facing roofs
- Weatherboarding and/or hanging tiles
- Undisturbed buildings or roofs
- A complex of similar buildings, in good habitat.

6.6.4 Conclusions

6.6.4.1 No potential roost sites exist within the Application Site, predominantly due to a lack of suitable features within the trees and buildings. The wider area supports a number of woodland habitats, mature gardens and grasslands which offer alternate foraging and commuting habitat for bats.

6.6.4.2 The site is poor foraging habitat and heavily fragmented, consequently, the Application Site is sub optimum for foraging and commuting bats and is not considered integral to the favourable population status of local bat populations.

6.6.5 **Wold Ecology does not recommend any further surveys for bats.**

## 6.7 Great crested newt.

6.7.1 No records of great crested newt occur within 2km of the Application Site. The closest known populations occur at Belton Brickworks (>5km south) and Thorne Warping Drain (>5km North West) both of which are fragmented by urban habitats and expanses of arable land.

6.7.2 The entire Application Site was assessed for its potential to support great crested newts, whilst conducting a walkover survey. In addition aerial photographs, maps and physical searches of the surrounding landscape gave an impression of how the Application Site is connected to wider sites and potentially great crested newt populations.

6.7.3 Refuge search.

6.7.3.1 Amphibians can take refuge under logs, bark and stones whilst in terrestrial habitat. All available features within the Application Site were turned over to search for the presence of amphibians. This method is not an effective method of presence/absence; however, it can be used as a general indication of amphibians within an area. Despite the time of year amphibians are occasionally found outside of hibernacula in such situations, especially during mild damp weather such as that prior and during the field survey.

6.7.4 Results.

6.7.4.1 No ponds or permanent water bodies suitable for breeding great crested newts were observed during the walkover survey. The wider habitat is largely well drained with the exception of garden ponds associated with the nearby housing estate. Garden ponds are typically sub-optimum great crested newt habitat and unlikely to hold viable breeding populations within such a fragmented sub-urban habitat.

6.7.4.2 No known great crested newt populations were recorded within 5km of the Application Site. The surrounding arable landscape and urban fringe significantly hampers great crested newt dispersal into the area, without the aid of humans. Great crested newts tend not to occur within areas of arable land unless it is directly adjoined to a breeding pond, unlike in the Application Site. Arable land is open, well drained with limited refugia leading to a significant risk of predation. The use of pesticides, lack of vegetation diversity and lack of refuge leads to poor invertebrate habitat and therefore poor foraging habitat.

6.7.4.3 Whilst it is not always possible to demonstrate site absence from a single scoping survey, with the evidence collected from a habitat survey, the likelihood of the presence of great crested newts in the Application Site is decreased. Key attributes to the reduced probability of great crested newts being present are:

- There is no current knowledge of great crested newts within the Application Site.
- No ponds exist within the Application Site and no suitable breeding ponds were observed within the surrounding area (<500m).
- The Application Site primarily comprises open grassland which inhibits dispersal by reducing areas of shelter, foraging grounds and leaving amphibians open to predation and desiccation. Consequently, Application Site is sub-optimum terrestrial habitat for amphibians.
- The open exposed nature of the site with its limited plant diversity and

improved grass with limited refugia results in a poor invertebrate habitat. Great crested newts predominantly prey on slugs, insects, spiders and earthworms. They tend to forage in woodland, scrub, rough grassland and wetland areas largely due to the large diversity and abundance of invertebrates which these areas attract.

- Currently, the Application Site consists of sub-optimum terrestrial great crested newt habitat, with limited refugia and hibernacula and contains no suitable aquatic habitat for breeding. This is essentially an "island" within a wider area of sub-urban housing and hard standing dominated by sub-optimum habitat.
- Great crested newts favour overwintering sites adjacent too or within tree cover. This offers more shelter through the winter and limits the severity of frost. The lack of tree cover and refugia reduce the likelihood of this species using the site to hibernate as well as the lack of a close breeding pond.
- Sub-urban housing, surrounding road networks, walls and curbs limit great crested newt dispersal to and from the site in the wider area.
- Great crested newts require areas of refuge such as cracks and crevices in the ground, old small mammal burrows, gaps beneath tree stumps and the bases of tussocks to shelter under during the day. The open well maintained nature of the site currently lacks these features, making it less suitable for the species.
- No records of great crested newt exist within 5km of the Application Site.

6.7.4.4 **In conclusion, Wold Ecology does not recommend any further great crested newt survey work.**

## 6.8 Reptiles

6.8.1 The desktop study identified grass snake, adder and common lizard as the only reptile species which is found within the wider area. Reptiles are moderately localised in North Lincolnshire.

6.8.2 Results

6.8.2.1 No direct observations or field signs of reptiles was recorded on site. It is unlikely to observe reptiles on phase 1 surveys without appropriate survey methodology, especially where populations are small or sparse. A full walkover was undertaken to assess the sites potential to support reptiles.

6.8.2.2 The Application Site is considered to be unsuitable for reptiles for the following reasons: -

- Reptiles thermoregulate in sheltered locations, predominantly in close proximity to cover such as rank or shrubby vegetation, large rocks, walls and tree stumps in which they can quickly escape. The Application Site primarily consists of open exposed habitat, with limited and largely insufficient thicker marginal vegetation, making reptiles prone to predation.
- Compost heaps, rotten logs and decaying vegetation provide important breeding, foraging and thermoregulation habitat for slow worm and grass snake. None of which are present in sufficient quantity within the Application Site.
- Reptiles use cracks, crevices and small mammal burrows to access underground refugia and hibernacula. These habitat features are limited within the Application Site, reducing the value to reptiles.

- The lack of the above features, with a sufficient depth to remain frost free reduces the potential for reptiles to hibernate within the Application Site.
- Reptiles are typically not very wide ranging species, instead staying in optimum habitat. Such optimum habitat does not occur within or around the Application Site reducing the likelihood of animals passing through the site.
- This past management is likely to have resulted in the site being sub-optimum for a long time period, reducing the likelihood of viable populations persisting.
- The open nature of the Application Site leaves reptiles open to predation from key predators including crows, kestrels, hedgehogs, domestic cats and foxes.
- The site is small, surrounded by disturbed land and fragmented from optimum reptile habitat in the wider area.
- The poor value of the site to amphibians (grass snakes chief food source) further limit the sites importance to grass snakes.

6.8.3 **Wold Ecology does not recommend any further reptile surveys.**

## 6.9 Birds

6.9.1 All bird species recorded by either sight, song or call were noted, in addition particular attention was given to key species of conservation concern and which habitat within the Application Site they were recorded using. All active (and disused) nests, territorial, breeding and foraging birds were recorded in further detail to analyse how breeding birds use the Application Site.

6.9.2 The following survey followed guidance and methods recommended within *Bird Monitoring Methods, a manual of techniques for key UK species* Gilbert et.al RSPB 1998, *Common Standards Monitoring Guidance for Birds* JNCC 2004 and *Survey Techniques Leaflet 8*.

### 6.9.3 Schedule 1 Listed Birds

6.9.3.1 Wold Ecology assessed the site for schedule 1 listed species recorded in Lincolnshire, which have the potential to breed within the Application Site and/or surrounding adjacent local area, or breed elsewhere whilst using the Application Site to forage or roost:

**6.9.3.2 The Application Site is of low value to schedule 1 listed species. This is primarily due to the intensively managed/disturbed nature of the application site, lack of suitable or extensive habitats in the locality and potential nesting sites.**

6.9.4 None-schedule 1 birds

6.9.4.1 Impacts to birds

6.9.4.1.1 Impacts related to breeding birds are essentially related to the temporary loss of habitat which is utilised by breeding species. Related to this is the risk that birds could be nesting within impacted habitats at the time that construction work is programmed to start. Of particular relevance to this project are small passerine species, particularly those associated with the trees.

6.9.4.2 Wintering Birds

6.9.4.2.1 The Application Site is not considered to be valuable to wintering birds like wildfowl and waders. The Application Site is too enclosed, with high fences and is bounded by housing and roads causing regular disturbance, reducing the value of the habitat for these species groups, nor is it in close proximity to suitable aquatic habitats. The only impact typically of any relevance to wintering birds are those associated with the temporary loss of food sources. This is principally associated with the loss of sections of hedgerow and scrub which provide a potential source of food to a range of wintering species. However, these habitats are abundant within the wider area and are not thought to be of significant importance to birds.

6.9.4.3 **Wold Ecology does not recommend any further bird surveys.**

## 6.10 Badgers

6.10.1 All features of potential value to badgers are surveyed; including areas of woodland (including plantation), small copses, hedgerows, embankments and rock outcrops. Well-worn animal paths and footpaths were inspected for badger footprints and links to setts.

6.10.2 The surveyor observations included any areas where there were noticeable changes in the topography providing sloping ground into which the badgers could excavate setts. The following field signs will indicate the presence of badgers:

- Badger setts and associated soil excavation
- Badger latrines and dung pits
- Badger prints
- Badger hairs
- Badger paths
- Evidence of badger foraging activity

6.10.3 Results.

6.10.3.1 No main setts, annexe setts, subsidiary setts or outlier setts were located within 50 metres of the development area boundaries or within the Application Site. Badgers have a preference for excavating setts on well drained calcareous grits and upper chalks rather than middle chalks and clays, although exceptions to this rule occur where no similar geology is present. Badgers often show a preference to sett excavation in woodland and scrub. Tree cover in the Application Site is limited to widely spaced hedgerow trees. Suitable habitat outside of the Application Site was also extensively searched.

6.10.3.2 A key consideration in relation to badgers is with respect to the temporary severance of regularly used paths and associated habitat and the possible disturbance or, in a worst-case scenario, damage to a badger sett. In relation to setts, the level of significance would be greatest in relation to impacts to large and permanently occupied setts. Since the Application Site currently has no evidence of any badger setts, it is only the risk of severance of well used dispersal routes which is likely to have an impact. None of which were observed within the Application Site.

6.10.3.3 **No further surveys or mitigation are required for badgers.**

## 6.11 Hedgehog

6.11.1 Legislation

6.11.1.2 Although the Hedgehog *Erinaceus europaeus* only receives partial protection under the Wildlife and Countryside Act 1981 (as amended), its numbers have declined dramatically over the past two decades, resulting in the suggested proposal of upgrade to a higher level of protected status. The British population has declined by 25% over the past 10 years. The reasons for the decline are thought to be complex but include the loss of hedgerows and permanent grasslands as well as agricultural intensification.

6.11.2 Survey Methodology

6.11.2.1 All features of potential value to hedgehogs are surveyed; including areas of thick vegetation, outbuildings, lawns, grassland, scrub, woodland and hedge bases. Evidence of breeding nests, hibernation nests and loafing nests were searched for in areas of suitable cover.

6.11.2.2 Well-worn animal paths, pool edges and footpaths were inspected for hedgehog footprints. Open areas were inspected for hedgehog droppings, particularly amenity grassland. Additionally, the surrounding road system was surveyed for road casualties.

6.11.2.3 The following field signs will indicate the presence of hedgehogs:

- Nests within dense vegetation, or under sheds/outbuildings
- Hedgehog droppings
- Hedgehog prints
- Road causalities.

6.11.3 Results.

6.11.3.1 No active or unused hedgehog nests were found within the hedge base within the Application Site. Most of the Application Site is too open to support nesting behaviour, although the hedgerow bases offers suitable habitat.

6.11.3.2 **No evidence of hedgehogs was recorded, consideration to hedgehogs should be given during site clearance and during construction.**

## 7.0 EVALUATION OF SURVEY RESULTS.

### 7.1 Overall Approach to Assessment.

7.1.1 The overall approach to assessment followed in this report can be summarised as: A baseline identification of the nature conservation interest within the ecological Application Site by establishing levels of interest for ecological features measured against definable criteria. The term Valued Ecological Receptor (VER) is used to describe the species, communities, habitats or sites selected for detailed study during the process of the ecological assessment.

### 7.2 Evaluation Criteria.

7.2.1 The thorough evaluation of the ecological importance of a site is essential in order to assess the significance of the ecological assessment

7.2.2 The evaluation criteria are given in detail in Appendix 6. Their aim is to consider the habitats, communities and species present on site in relation to the following:

- The legislative framework (e.g. the Wildlife and Countryside Act 1981, Habitats and Species Regulations 2010 and the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC) for the presence of protected species and habitats).
- Nature conservation designations, including national site designations (Sites of Special Scientific Interest, National Nature Reserves etc.), local designations (Sites of Importance for Nature Conservation, Local Nature Reserves, County Wildlife Sites etc.).
- Accepted criteria for species rarity and declining populations, and rarity of habitat types or communities, including species and habitats identified in the British Red Data Books, national biodiversity action plan, and species and habitats identified in regional or local biodiversity action plans where available.
- Accepted criteria for overall site evaluation (including rarity, diversity, naturalness, historical factors and issues relating to landscape ecology).

### 7.3 Evaluation of Survey Results.

7.3.1 The field survey work did not identify the presence of any habitats or plant species considered rare in the United Kingdom.

Rarity is defined in this report as:
Rare—species not recorded in more than 100, 10 x 10 km grid-squares in the British Isles.
Very Rare—species not found in more than 15 different 10 x 10 km grid-squares in the British Isles.

## 7.4 Habitats

### 7.4.1 Biodiversity Action Plans (BAP) and Species and Habitats of Principal Importance for the Conservation of Biological Diversity

7.4.1.1 In 1995, 'Biodiversity: The UK Steering Group Report' was published, which aimed to conserve and enhance biological diversity within the UK, including action plans for 38 key habitats and for 402 of our most threatened species. These plans describe the status of each habitat and species, outline the threats they face, set targets and objectives for their management, and propose actions necessary to achieve recovery. The Biodiversity Action Plans (BAP) have recently been updated, new ones added and others removed, so there are now 1,149 species and 65 habitats that have been listed as priorities for conservation action. A list of these UK BAP species and habitats can be found at http://www.ukbap.org.uk/NewPriorityList.aspx.

7.4.1.2 In addition there are approximately 150 Local Biodiversity Action Plans (LBAP), normally at county level. These plans usually include actions to address the needs of the UK priority habitats and species in the local area, together with a range of other plans for habitats and species that are of local importance or interest.

7.4.1.3 The following BAP Habitats are recorded on site.

| UK BAP broad habitat. | UK BAP priority habitat. | Habitat present within the Application Site. |
|---|---|---|
| Rivers and Streams | Rivers | **N** |
| Standing Open Waters and Canals | Oligotrophic and Dystrophic Lakes | **N** |
| | Ponds | **N** |
| | Mesotrophic Lakes | **N** |
| | Eutrophic Standing Waters | **N** |
| | Aquifer Fed Naturally Fluctuating Water Bodies | **N** |
| Arable and Horticultural | Arable Field Margins | **N** |
| Boundary and Linear Features | Hedgerows | **N** |
| Broadleaved, Mixed and Yew Woodland | Traditional Orchards | **N** |
| | Wood-Pasture and Parkland | **N** |
| | Upland Oakwood | **N** |
| | Lowland Beech and Yew Woodland | **N** |
| | Upland Mixed Ashwoods | **N** |
| | Wet Woodland | **N** |
| | Lowland Mixed Deciduous Woodland | **N** |
| | Upland Birchwoods | **N** |
| Coniferous Woodland | Native Pine Woodlands | **N** |
| Acid Grassland | Lowland Dry Acid Grassland | **N** |
| Calcareous Grassland | Lowland Calcareous Grassland | **N** |
| | Upland Calcareous Grassland | **N** |
| Neutral Grassland | Lowland Meadows | **N** |
| | Upland Hay Meadows | **N** |
| Improved Grassland | Coastal and Floodplain Grazing Marsh | **N** |
| Dwarf Shrub Heath | Lowland Heathland | **N** |
| | Upland Heathland | **N** |
| Fen, Marsh and Swamp | Upland Flushes, Fens and Swamps | **N** |

| | | |
|---|---|---|
| | Purple Moor Grass and Rush Pastures | **N** |
| | Lowland Fens | **N** |
| | Reedbeds | **N** |
| Bogs | Lowland Raised Bog | **N** |
| | Blanket Bog | **N** |
| Montane Habitats | Mountain Heaths and Willow Scrub | **N** |
| Inland Rock | Inland Rock Outcrop and Scree Habitats | **N** |
| | Calaminarian Grasslands | **N** |
| | Open Mosaic Habitats on Previously Developed Land | **N** |
| | Limestone Pavements | **N** |
| Supralittoral Rock | Maritime Cliff and Slopes | **N** |
| Supralittoral Sediment | Coastal Vegetated Shingle | **N** |
| | Machair | **N** |
| | Coastal Sand Dunes | **N** |
| **Marine Habitats** | | **N** |

**7.4.1.4 No UKBAP Habitats occur within the Application Site.**

## 7.5 Species

7.5.1 Bats

7.5.1.1 It is good practice, where bats may come into contact with roof timbers, to carry out timber treatment using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. A list of Natural England approved paints and timber treatments is available at http://www.naturalengland.org.uk/Images/Bat%20roost%20timber%20treatment_tcm6-10167.pdf.

7.5.1.2 Specially designed bat boxes can be located on site. Schwegler Bat Boxes are recommended and well tested boxes. The following bat boxes provide additional roost habitats and are available from Wold Ecology:

- The **1FQ** is an attractive box designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside along with a rough sawn front panel to enable the bats to land securely.
- Bat Tube (**1FR** and **2FR**) system. The tube is designed to meet behavioural requirements of the types of bats that roost in buildings i.e. pipistrelle spp. This design can be installed flush to external walls and beneath a rendered surface.

7.5.1.3 The majority of these boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: www.schwegler-natur.de and www.bct.org.uk.

7.5.1.4 Wold Ecology recommends that at least 2 bat boxes are sited on new buildings on site. Bat boxes should be erected on south, east or west elevations; 3-5 metres above ground level or close to roof lines.

7.5.1.5 Lighting

7.5.1.5.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).
The principles are:

- Reduce or remove the UV component of light emitted. To achieve this, a lamp that does not emit UV or a filtration product is recommended
- External lighting requirements will be carefully designed to avoid light spillage affecting foraging bats and bat box entrances. Thus creating a dark and green infrastructure and can be achieved by using hoods, cowls, shields and louvers. Planting or manmade barriers can also protect against light spillage.
- Security lighting will be on a short timer and motion sensitive to large objects only.
- Use of timers to reduce the hours lit and tailors this specifically to wildlife affected.
- Lights will not be mounted where they will shine directly on to the surrounding tree cover used by foraging and commuting bats.

7.5.1.6 Habitat enhancements

7.5.1.6.1 Freshwater, woodland, grassland, urban gardens, trees and amenity green space are suitable foraging habitats for bats whilst linear habitats such as hedgerows and streams are particularly important commuting routes between roosts and foraging ground. It is recommended that the natural landscape remains largely unchanged and as many mature trees are retained on the site to continue to provide cover and feeding grounds. Landscaped areas can provide good foraging grounds for bats. Areas can be improved by growing night-scented flowers and other flowers favoured by insects. More information on suitable planting to encourage bats obtained from The Bat Conservation Trust (www.bats.org). Suitable species include:

- Foxglove *Digitalis purpurea*
- Cowslip *Primula veris*
- Red campion *Silene dioica*
- Marjoram *Origanum vulgare*
- Ox-eye daisy *Leucanthemum vulgare*
- Red clover *Trifolium pratense*
- Evening primrose *Oenothera biennis*.
- Honeysuckle *Lonicera periclymenum.*
- Wild Clematis *Clematis virginiana*

### 7.5.2 Birds

7.5.2.1 It is concluded that the study site is a good habitat for woodland edge and agricultural bird species with various designations. There is nesting potential for a range of bird families such as finches, tits, sparrows, thrushes, chats and raptors at the site. Several simple management prescriptions can improve the site for breeding bird species.

7.5.2.2 Any trees, shrubs and vegetation to be removed should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between September and

February inclusive) or be carefully checked by an ecologist to confirm no active nests are present - prior to removal during the summer period. If nesting birds are found during the watching brief, works will need to stop until the young have fledged. Since a number of nests are active, work will need to wait until fledging has occurred, then trees should be removed immediately to avoid other nests being created.

7.5.2.3 In order to increase nesting opportunities for birds, it is recommended that 4 Schwegler bird boxes are erected throughout the site. A summary of recommended bird boxes are listed below:

| Name | Description | Number |
|---|---|---|
| Schwegler Nest Box 1B | Entrance hole 32 mm. | 2 |
| Schwegler Nest Box 1B | Entrance hole 26 mm. | 2 |

7.5.2.4 Boxes should be attached to trees using wire where possible, it is important that nails are not used as they damage the tree, get pushed out as the tree grows and can damage chainsaw blades and cause injury if the tree is felled.

7.5.2.5 Boxes should be placed so that the entrance does not face the prevailing wind, rain and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas. Boxes should be positioned away from the damp side of the tree trunk, usually told by algae, lichen and moss growth. Boxes should also be angled downwards to stop rain blowing into them.

7.5.2.6 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level. A clear flight path should be available to and from the nest box.

7.5.2.7 Boxes should be placed at a density of approximately 10 per hectare within woodland like that on the site. This will help ensure that competition is not too great for more timid species such as marsh tits and coal tits. Metal plates should be fitted to the front of the boxes to stop grey squirrels and brown rats enlarging the entrance holes and predating the nestlings and eggs.

### 7.5.3 Hedgehogs

7.5.3.1 Care must be taken whilst carrying out vegetation clearance, or strimming. A thorough check of the vegetation prior to removal will help ensure that no hedgehogs are injured or killed during development works. Sleeping hedgehogs frequently suffer severe injuries from strimmers.

7.5.3.2 Avoid setting fire to piles of vegetation unless they have been turned, checked or moved immediately prior to burning. Hedgehogs often get killed or injured in fires during vegetation removal ad during early November.

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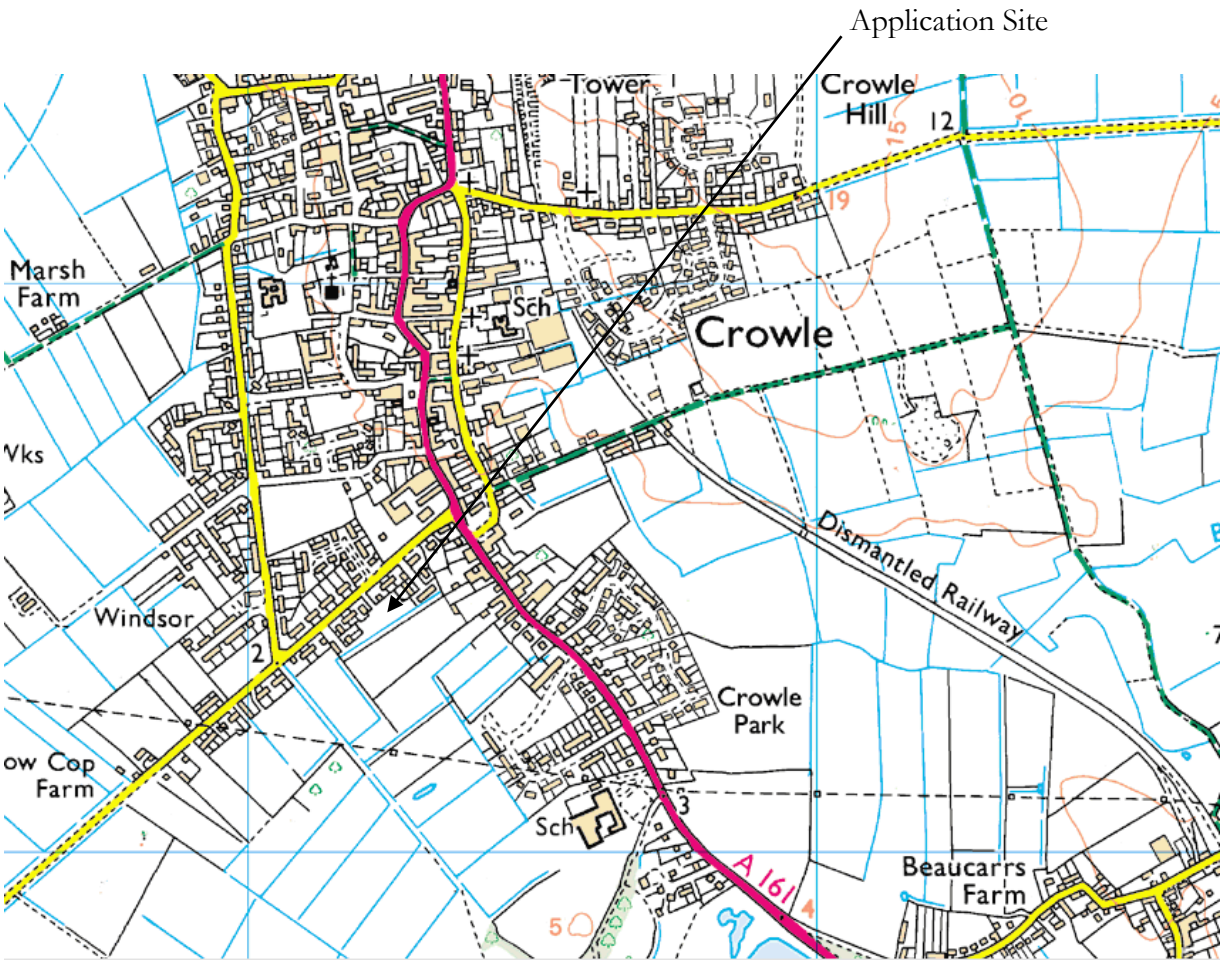
## 9.0 APPENDICES

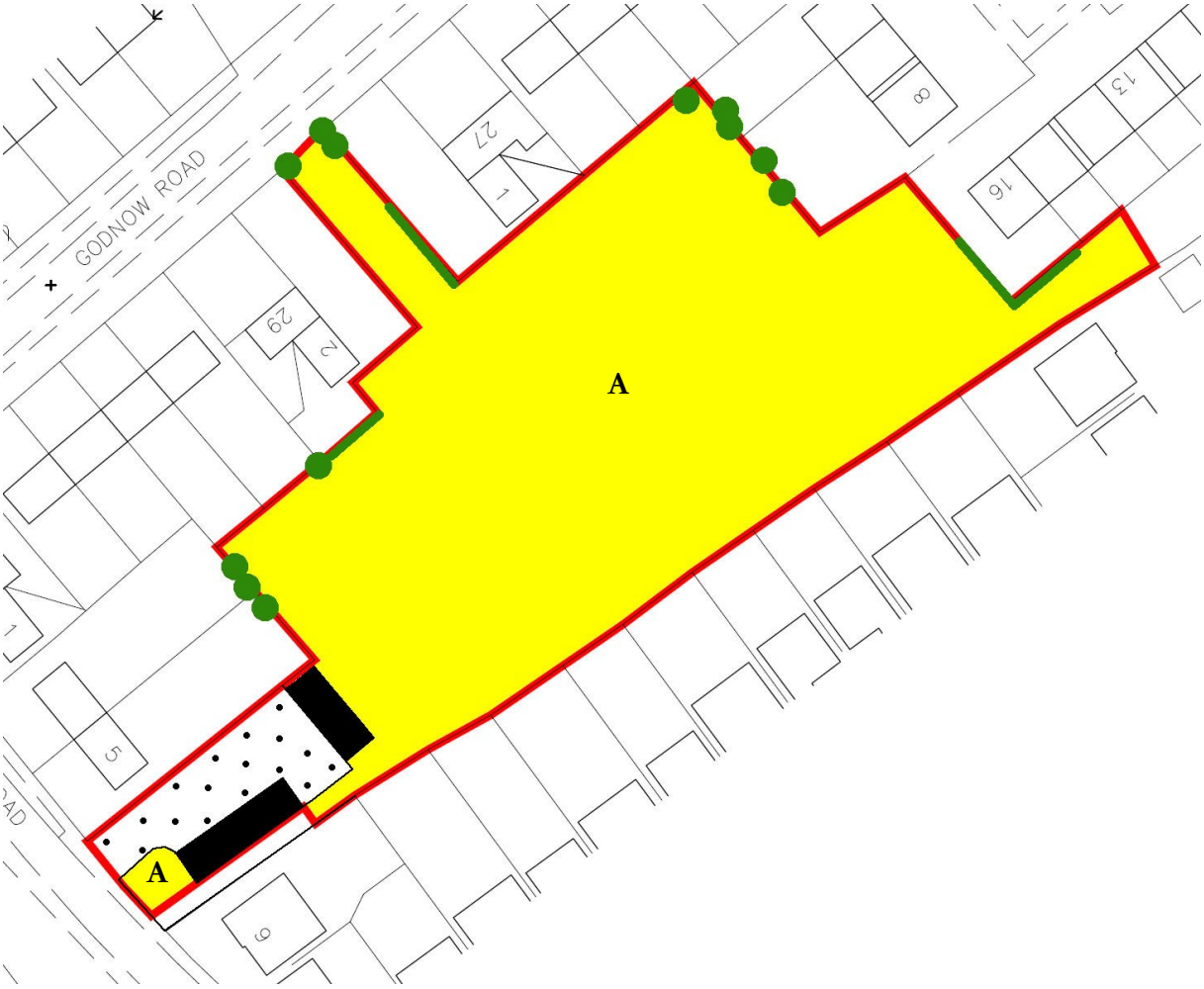
### 9.1 Appendix 1 – Location map

N



## 9.2 Appendix 2 - Phase 1 Map

**Not to scale. N**




**KEY.**

| | |
|---|---|
| | **Tree cover.** |
| A | **Amenity grassland.** |
| | **Buildings.** |
| | **Bare ground.** |
| | **Site boundary.** |

## 9.3 Appendix 3 – Summary of desktop study

| Organisation. | Response Summary. | Date. |
|---|---|---|
| Natural England. | Local designations. | June 2015 |
| Natural England. | UKBAP species and habitats within 2 km of the Application Site. | June 2015 |
| Lincolnshire Environmental Records Centre | Species lists within 2 km of the Application Site. | June 2015 |
| National Biodiversity Network. | Species lists within 2 km of the Application Site.. | June 2015 |

## 9.4 Appendix 4 - Protected Species Legislation

The following provides background to the current legislation in England - for full details reference should be made to the relevant legislation. A number of wild animals are classified as Protected Species as they are protected by various pieces of legislation. The most commonly encountered Protected Species of animal are listed in the table below. This table summarises which sections of legislation each species is protected by and the legislative text is provided on the following pages.

| Legislation | Schedule 5 Wildlife and Countryside Act 1981 (As amended) Part 1 | | | | | | | EPS | PBA |
|---|---|---|---|---|---|---|---|---|---|
| | S1 (1) | S1 (4 & 5) | S9 (1) | S9 (2) | S9 (4)(a) | S9 (4)(b) | S9 (5) | | |
| **Adder** ***Vipera berus*** | | | ✓* | | | | ✓ | | |
| **Common lizard** ***Zootoca vivipara*** | | | ✓* | | | | ✓ | | |
| **Grass snake** ***Natrix natrix*** | | | ✓* | | | | ✓ | | |
| **Slow worm** ***Anguis fragilis*** | | | ✓* | | | | ✓ | | |
| **Smooth snake** ***Coronella austriaca*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Sand lizard** **Lacerta agilis** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Great Crested Newt** ***Triturus cristatus*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Natterjack Toad** ***Epidalea calamita*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **All UK bats** **Chiroptera** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Water vole** ***Arvicola amphibious*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| **Otter** ***Lutra lutra*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Dormouse** ***Muscardinus avellanarius*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **Badger** ***Meles meles*** | | | | | | | | | ✓ |
| **Red Squirrel** ***Sciurus vulgaris*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| **Pine Marten** ***Martes martes*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Scottish Wildcat** ***Felis silvestris silvestris*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| **White-clawed crayfish** ***Austropotamobius pallipes*** | | | ✓ | | | | ✓ | | |
| **All Nesting birds** | ✓ | | | | | | | | |
| **Specific Nesting birds i.e. Barn Owl, Black Redstart** | ✓ | ✓ | | | | | | | |

**S = Section**
**( ) = Paragraph**
**EPS = European Protected Species i.e. listed under Regulation 40 of the Conservation (Natural Habitats &c.) Regulations 2010**
**PBA = Protection of Badgers Act 1992**
*** = Only part of this section**

## Legislative Text

### Wildlife and Countryside Act 1981 (as amended)

Since its original enactment, the Wildlife and Countryside Act has been subject to many changes (notably via Schedule 12 of the Countryside and Rights of Way Act 2000). These have in particular affected penalties and enforcement. Offences under section 9 of the Act are now 'arrestable'. Enforcement is usually by the Police and less frequently by Natural England. However, section 25(2) of Wildlife and Countryside Act also states that a local authority may institute proceedings. Prosecutions can result in a level five fine (currently £5000) for each offence (and the Act is specific that killing/injuring of each individual animal can constitute a separate offence), the forfeiture of any equipment, etc., used to perpetrate that offence and (under the Countryside and Rights of Way Act 2000) up to six months imprisonment.

The Wildlife and Countryside Act 1981 (as amended), transposes into domestic law the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention). It is an offense under the various sections of Part 1 of the Act to -

**S.1(1)** intentionally kill, injure, or take any wild bird or their eggs or nests.

**S.1(4)** intentionally or recklessly kill, injure, or take any wild bird listed on Schedule 1 of the Act, or their eggs or nests (special penalties apply if convicted) (For a full list of Schedule 1 bird species see the full text of the Wildlife and Countryside Act 1981 [as amended])

**S.1(5) (a)** disturb any wild bird listed on Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
**(b)** disturb dependent young of such a bird

**S.9(1)** intentionally or recklessly kill, injure or take any wild animal included in Schedule 5 (certain reptiles are only protected from killing and injuring);

**S.9(2)** be in possession or control of any live or dead wild animal included in Schedule 5 or any part or derivative;

**S.9(4) (a)** intentionally or recklessly damage or destroy, or obstruct access to, any

structure or place used by a Schedule 5 animal for shelter or protection;

**S.9(4) (b)** disturb any such animal while it is occupying such a structure or place which it uses for that purpose

**S.9(5) (a)** sell, offer for sale, possess or transport any live or dead wild animal included in Schedule 5 for the purpose of sale or any part or derivative;

**S.9(5) (b)** advertise for buying or selling such things.

**European Protected Species (EPS)**

EPS and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats & Species Regulations, 2010. These Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

A person who—

(a) deliberately captures, injures or kills any wild animal of a European protected species,

(b) deliberately disturbs wild animals of any such species,

(c) deliberately takes or destroys the eggs of such an animal, or

(d) damages or destroys a breeding site or resting place of such an animal, is guilty of an offence.

For the purposes of paragraph (b), disturbance of animals includes in particular any disturbance which is likely—

(a) to impair their ability—

(i) to survive, to breed or reproduce, or to rear or nurture their young, or

(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

(b) to affect significantly the local distribution or abundance of the species to which they belong.

(However, please note that the existing offences under the Wildlife and Countryside Act, which cover obstruction of places used for shelter or protection (for example, a bat roost), disturbance and sale, still apply to EPS.)

These actions can be made lawful through the granting of licenses by the appropriate authorities, e.g. Natural England. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the wild population of the species concerned.

**Protection of Badgers Act 1992 (PBA)**

The main legislation protecting badgers is the Protection of Badgers Act 1992. This Act consolidates all previous legislation including the Badgers Act 1973 (as amended) and the Badgers (Further Protection) Act 1991. Under the 1992 Act it is an offence to-

- destroy a sett;
- interfere with a badger sett by damaging a sett or any part thereof;
- obstruct access to a sett;
- disturb a badger while occupying a sett;
- wilfully kill, injure, take or attempt to kill, injure or take a badger;
- dig for a badger;
- possess a dead badger or any part of a badger;
- cruelly ill-treat a badger;
- use badger tongs in the course of killing, taking or attempting to kill a badger;
- sell or offer for sale or control any live badger;
- mark, tag or ring a badger;
- cause a dog to enter a sett;

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger". Since development operations may take place over a protracted period, Natural England recommends that licences be sought for developments that may affect seasonally–used setts as well as main setts. Natural England considers a good guide to be that if a sett has shown signs of occupation within the past twelve months it is considered active.

The Protection of Badgers Act 1992 allows for licences to be issued for a number of purposes, including development under the Town and Country Planning Act 1990 and to prevent serious damage to property. Licences to interfere with badger setts or disturb badgers for development are issued by the Government's statutory nature conservation agencies, e.g. Natural England.

## 9.5 Appendix 5 - Staff Profiles

**Surveyor Profile – Daniel Lombard B Sc. (Hons), MCIEEM.**

**Job title**: Ecologist.

**Expertise.**

- Phase 1 habitat field surveys and ecological appraisals including Building Research Establishment Environmental Assessment Method (BREEAM) and Code for Sustainable Homes (CODE) assessments.
- Bat surveys, bats and wind turbine assessments, bat sound analysis and monitoring.
- Great crested newt and reptile surveys.
- Mammal surveys including water vole, otter and badger.
- Management planning, pond and wetland management.

**Qualifications.**

- B Sc. Environmental Science.
- Great Crested Newt License – CLS01634
- Bat License – CLS01634

**Professional Membership.**

- Member of the Chartered Institute of Ecology and Environmental Management.

**Career Summary.**

- Daniel has spent all his working life in the environmental sector. He is an experienced and competent field ecologist with proven skills in species identification across a range of biota and an in-depth appreciation of many aspects of biodiversity, ecology and biology.
- Upon leaving University Daniel volunteered with a range of conservation organisations including The Wildlife Trust, North York Moors National Park, BTO and RSPB.
- He briefly operated as a freelance ecologist before starting full time at Wold Ecology.
- Daniel is currently involved in a number of local projects in which he has volunteered his time and resources. He is a member of Filey Bird Observatory and acts as the recorder for both Dragonflies and Butterflies within the group. He contributes to the BTO bird ringing scheme, is a member of Scarborough Field naturalists and contributes to national invertebrate, bird, fungi and mammal recording schemes.

**Project Experience in last 5 years.**

- Daniel has undertaken over 150 bat activity surveys since 2010 including dawn and dusk surveys at a range of sites across England.
- Daniel specialises in reptile, amphibian, bird and mammal surveys and has undertaken a wide range of surveys for species including otter, water vole, badger, adder, grass snake, common lizard, slow worm and great crested newt. This includes writing and contributing towards mitigation strategies and habitat enhancements where appropriate. He has also contributed to white clawed crayfish surveys.
- Daniel has undertaken numerous Phase 1 surveys and biodiversity assessments as well as both BREEAM and CODE reports.
- Daniel has undertaken and helped supervise a seabird surveys on the North Yorkshire coastline at an internationally important seabird colony on the behalf or Natural England and the Environment Agency. This has involved leasing with a variety of conflicting stakeholders to mitigate against potential adverse impacts to the colony.

## 9.6 Appendix 6 – Identification of Legal and Planning Policy Issues in England

### *Scope of Assessment*

The first step is to identify any biodiversity features found on the site that are subject to legal or policy controls, as follows:

*Designated Sites*

The location of the site is compared to the distribution of sites with a statutory or non-statutory nature conservation designation using information derived from the desk study. Consideration is given to designated sites that could be affected directly or indirectly by the proposed development.

*Habitats outside Designated Sites*

The habitats known to occur on the site are compared to those which receive some protection, in law or policy, outside of designated sites i.e. hedgerows, uncultivated land and semi-natural areas, habitats listed as Priorities in the UKBAP, habitats listed as Habitats of Principal Importance for the Conservation of Biodiversity by the Secretary of State and habitats listed as requiring action in the Local Biodiversity Action Plan.

*Ancient Woodland*

The ancient woodland inventory is checked to determine whether any known ancient woodland occurs either on the site or nearby.

*Protected Species*

The species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in nature conservation legislation i.e. the Wildlife and Countryside Act 1981, as amended, the Conservation (Habitats &c) Regulations 1994.

In addition, the species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in animal welfare legislation, i.e. the Badgers Act 1992 and the Wild Mammals (Protection) Act 1996.

*Biodiversity Action Plan Priority Species*

The species known to occur on the site are compared with those listed as Priorities in the UKBAP, Species of Principal Importance for the Conservation of Biodiversity by the Secretary of State or requiring action in the Local Biodiversity Action Plan.

*Other Species of Conservation Concern*

The species known to occur on the site are compared with other nature conservation listings, such as red data books.

*Invasive Plant Species*

The species of plant present on the site are compared with those listed by government agencies as invasive non-natives, with particular attention given to those listed in the Wildlife and Countryside Act.

***Review of Legislation and Policy***

If any of the above are found to occur on or near the site and are likely to be affected by the development in any way, the relevant legislation and planning policy (including national, regional, county and borough policies) are examined to determine whether the proposed development is compliant.

***Ecological Enhancement***

Planning policy generally requires new developments to be enhanced for biodiversity. The existing proposals are considered to determine whether biodiversity enhancements are offered and whether they are adequate to meet the policy requirements. Again, national, regional, county and borough policies are considered.

***Identification of Potential Further Ecological Issues***

Further ecological issues are those which cannot be resolved during the desk study and extended Phase 1 habitat survey for any reason, including the following:

- The development is near a designated site and consultation with the relevant regulator is required in order to determine whether further assessment is required;
- Suitable habitat is present on or near the site for a protected species/species of conservation concern and specialist survey techniques are required for their detection;
- Suitable habitat is present on or near the site for a protected species/species of conservation concern and the extended Phase 1 habitat survey was not undertaken at a suitable time of year for their detection;
- A protected species/species of conservation concern was found on or near the site but further information on population size or distribution is required in order to resolve any legal and planning policy issues (such as obtaining licences).

Discussion of issues raised by 3rd parties, e.g. reports of protected species from the site by local people, may also be discussed under this heading.

The desk study is used as a guide to the protected species/species of conservation in the local area, however, the list is not taken to be exhaustive and it is borne in mind that some species may no longer occur in the locality.

No attempt is made to evaluate the importance of the site for species not yet confirmed to be on or near the site, nor to discuss the implications for the development if the species were to be found on the site.