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Cawood, North Yorkshire

EXTENDED PHASE 1 HABITAT SURVEY
March 2015

	Staff Member	Position
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Report prepared by :	Emily McGregor BSc (Hons)	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.**	

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1.0 EXECUTIVE SUMMARY

1.1 In March 2015, Wold Ecology was commissioned by Mr D. Pulleyn to undertake an Extended Phase 1 Habitat Survey on land to the north west of Wolsey Avenue, Cawood (national grid reference SE 56855 37514) in North Yorkshire.

1.2 In order to accomplish the brief, a desktop 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 pasture, scattered trees, remnant hedgerows, standing water and amenity grassland situated adjacent to residential properties. There are no statutory or non-statutory sites within the site boundary.

1.4 The proposed development involves site clearance and outline planning permission with all matters reserved for the erection of a residential development, creation of access road and associated public open space.

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 newt
- Badger
- Birds
- Reptiles
- Hedgehog

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:

- **In order to comply with the requirements of the latest Natural England guidance (EN 2001), Wold Ecology recommends a full presence/absence great crested newt survey is undertaken on all watercourses within 500m of the Application Site during the period mid-March to mid-June, with at least two visits during the period between mid-April to mid-May.**
- **Wold Ecology does not recommend any further specific bird surveys. However, 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.**

1.7 The data collected to support the output of this report is valid for 18 months. This report is valid until **September 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 listed 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 March 2015, Wold Ecology was commissioned by Mr D. Pulleyn to undertake an Extended Phase 1 Habitat Survey on land to the north west of Wolsey Avenue, Cawood (national grid reference SE 56855 37514) in North Yorkshire.

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 year's 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 – Chris Toohie M Sc., MCIEEM.

3.4.1 Job title: Director.

3.4.2 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, writing and implementing bat development licenses, bat sound analysis and monitoring.
- Great crested newt and reptile surveys.
- Management planning, woodland and orchard management and community environmental projects including funding applications.

3.4.3 Qualifications.

- M Sc. Arboriculture and Community Forest Management.
- HND Countryside Management.
- Great Crested Newt License – 2014-5990-CLS (held concurrently since 2009).
- Bat Handling License – CLS00887 (held concurrently since 2009).

3.4.4 Professional Membership.

- Member of the Chartered Institute of Ecology and Environmental Management (held concurrently since 2007).

3.5 Surveyor Profile – Emily McGregor BSc (Hons)

3.5.1 Job title: Ecologist.

3.5.2 Expertise.

- Habitat monitoring surveys, Phase 1 and Phase 2, NVC habitat surveys and biodiversity assessments
- Protected species surveys and preparation of Natural England European Protected Species Licence Application documents
- Management planning and habitat management

3.5.3 Qualifications.

- BSc Environmental Management.

3.6 Emily McGregor meets the criteria for a suitably qualified ecologist by:

- Holding a Bachelor of Science degree (Hons) in Environmental Management
- Being employed in the environmental management field since 2003, and working as an associate ecologist with Wold Ecology since 2010.

3.7 Detailed surveyor profiles are included in Appendix 6.

3.8 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 6th March 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	06/03/2015	10.30	12.30	15 mph	SW	8°C	8°C	None	60%

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 in a rural location adjacent to existing residential and agricultural habitats. The Application Site is approximately 3.4 hectares and is located on the south western outskirts of the village of Cawood. The site is surrounded by arable land and grazed pasture to the north, south and west with residential dwellings to the east. The site comprises grazed improved grassland, fragmented hedgerows, scattered trees, amenity grassland and a pond. Habitat connectivity to the wider countryside is provided by hedgerows and dry ditches.

6.1.2 Woodland cover in the locality is limited and occurs as small shelterbelts adjacent to farms and small holdings. Habitat connectivity is provided by hedgerows, hedgerows with trees and ditches that drain the predominant arable land and link the site with the wider countryside. A number of watercourses are located within 500m and the River Ouse is approximately 600m north east of the Application Site.

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
- Hedgerow
- Mature trees and woodland
- Arable
- Mature private gardens
- Ponds and watercourses
- Grazed pasture
- The River Ouse
- Bishop Dyke

6.2 Desktop Study

6.2.1 Natural England, the North & East Yorkshire Ecological Data Centre (NEYEDC) and the National Biodiversity Network (NBN) datasets were researched in order to obtain any ecological information that they hold of relevance to the Application Site.

6.2.2 The desktop study identifies land parcels of nature conservation value within 2 km 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 There are no statutory sites within 2 km of the Application Site.

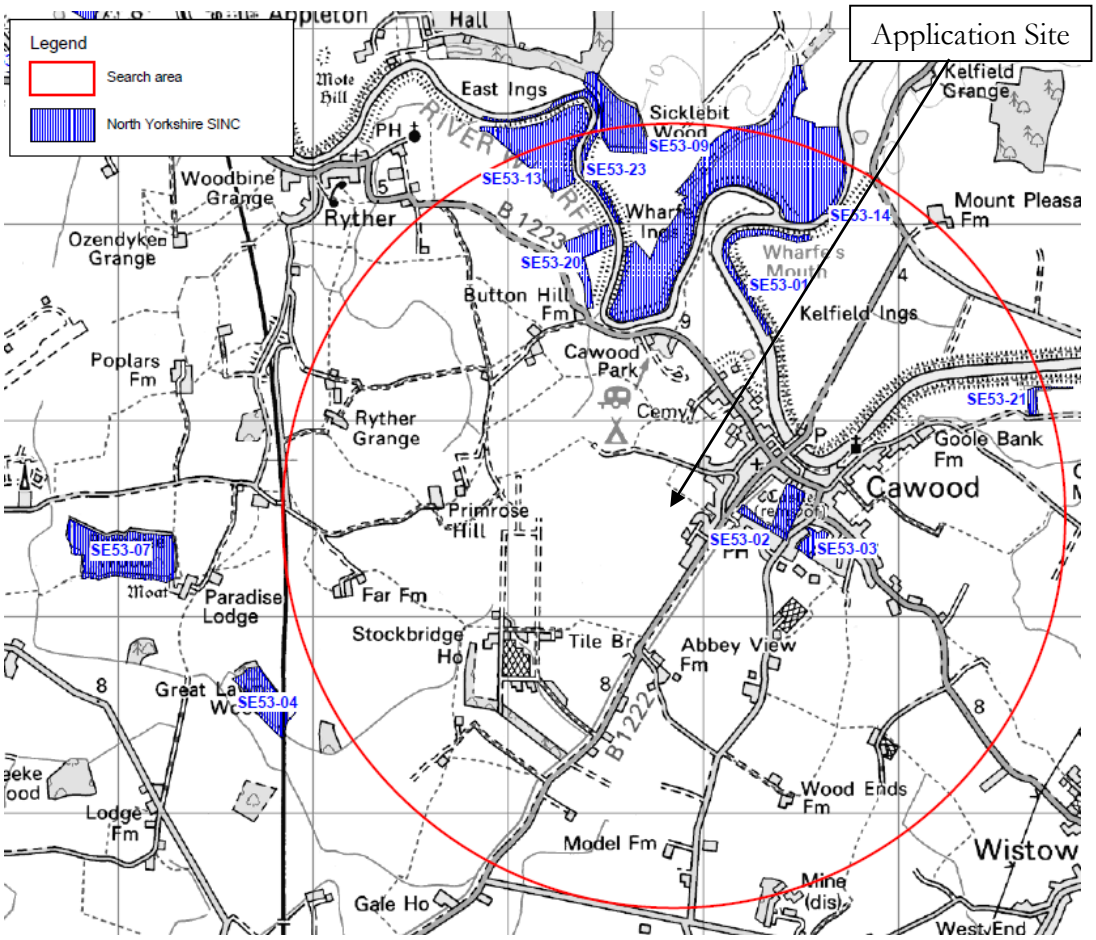
6.2.4 Local Wildlife Sites (LWS).

6.2.4.1 The following local wildlife sites (known in North Yorkshire as SINCs (Sites of Importance for Nature Conservation) lie within 2 km of the Application Site:

Site Code	*Site Name*	*Grid Reference*	*SINC status*
SE53-14	Wharfe Ings	SE 574 391	SINC
SE53-21	Borrow Pit, Cawood	SE 586 380	SINC
SE53-02	Castle Garth	SE 572 375	SINC
SE53-09	Sicklebit Wood	SE 565 395	SINC
SE53-01	Kelfield Ings	SE 571 387	SINC
SE53-23	Left bank R Wharfe, Cawood Park	SE 563 393	Deleted SINC
SE53-13	Ryther Ings, Ryther	SE 561 393	SINC
SE53-20	Hay Meadow, Ryther Ings	SE 564 389	SINC
SE53-03	Kewesbury Hall Close	SE 575 373	SINC

Source: NEYEDC, 2015

Figure 1 – Map of statutory and non-statutory sites and survey area. 1:25,000 N



Source: NEYEDC, 2015

6.2.4.2 The non-statutory sites will not be impacted on by the proposed development due the distance between the Application Site and the nearest SINC which is greater than 200 metres.

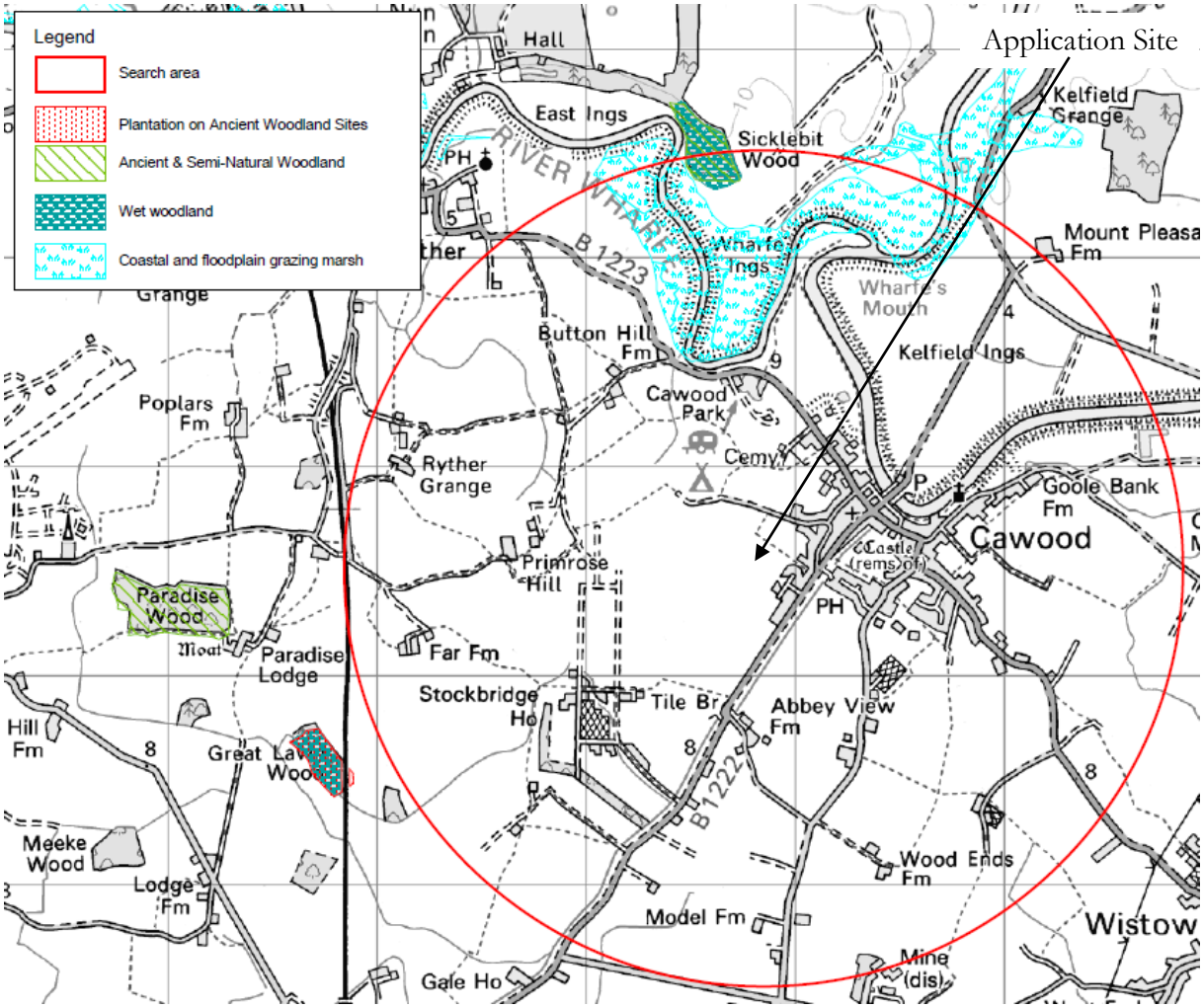
6.2.5 Natural England Habitat Inventories

6.2.5.1 All the Natural England Habitat Inventories were searched, including the woodland inventory and grassland inventory. The following areas of notable habitat are found within 2km of the Application Site. None of the habitats tabulated below are within 500m of the Application Site.

Designation	*Name or location of site*	*Grid Reference*
Ancient & Semi-Natural Woodland Wet woodland	Sicklebit Wood	SE 566 394
Coastal and floodplain grazing marsh	Adjacent to R Wharfe	SE 563 394 to SE 577 393

Source: NEYEDC, 2015

Figure 2 - Map of notable habitats listed in the Habitats Inventory. 1:25,000 N



Source: NEYEDC, 2015

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. The Application Site lies within the National Character Area 39: Humberhead Levels.

6.3.3 **National Character Area 39: Humberhead Levels (as described by Natural England, 2012)**

6.3.3.1 The Humberhead Levels is a flat, low-lying and large scale agricultural landscape. There are several sites of international significance for their biodiversity; these include Thorne and Hatfield Moors, the River Derwent, and stretches of the tidal rivers Ouse and Trent that fall within the Humber Estuary. Sandy soils give rise to lowland heathland such as at Skipwith Common. The Isle of Axholme is of international significance for its extensive strip field system, while other areas reveal distinct field and drainage patterns linked to past uses and drainage of the area. In the central areas the large geometric fields are generally bounded by ditches and the highly productive agricultural land is maintained by pumping to keep the water table down. There are significant flood management issues to address, such as finding ways of extending flood storage and floodplains, with the possibility of expanding wetland habitats. There are important road, rail and water routes linking industrial areas to the east with the hinterland. Despite these busy areas, there are some very remote and tranquil areas, notably at Thorne and Hatfield Moors and the Lower Derwent Valley. The whole area is characterised by long views and big open skies.

6.3.3.2 Relevant Statements of Environmental Opportunity (SEO):
SEO 1: Safeguard, manage and expand the wetland habitats, including the internationally important lowland raised bogs, the floodplain grazing marsh, reedbeds, wet pastures and watercourses, to protect and enhance biodiversity, contribute to landscape character, address climate change and reduce flood risks.
SEO 2: Manage the agricultural landscape to retain its distinctive character and its productivity, while improving its contribution to biodiversity, the protection of vulnerable soils and palaeo-environmental evidence, and the water resource.

6.3.4 Natural Areas

6.3.4.1 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. Natural Areas define local needs in light of national priorities, also providing a focus for Local Biodiversity Action Plans. **Natural Area 22 – the Humberhead Levels**

6.3.5 Natural Area 22 – the Humberhead Levels (as described by English Nature 1997)

6.3.5.1 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.

6.3.5.2 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.

6.3.5.3 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.

6.3.5.4 Hedgerows once formed a chequer board 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.

6.3.5.5 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.

6.3.5.6 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.

6.3.5.7 **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.

6.4 European Protected Species records

6.4.1 Badger *Meles meles* is recorded within 2km of the Application Site (source: NEYEDC and NBN Gateway 2015).

6.4.2 Bats

- Currently, there is no pre-existing information on bats at the site.
- Data for the 10km grid square SE53 shows records of Natterer's *Myotis nattereri,* noctule *Nyctalus noctula*, Daubenton's bat *Myotis daubentonii* soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* (source: NBN Gateway 2015).

6.4.3 Great crested newt

- Great crested newt *Triturus cristatus* have been recorded in Cawood and within 500m of the Application Site (source: NEYEDC & NBN Gateway 2015).
- Great crested newt is recorded at Cawood Ings Borrow Pit, Cawood Castle Garth Pond and Cawood Ings Lane; these are all within 2 km of the Application Site (source – NEYEDC 2015).
- Cawood Castle Garth is located within 500m of the Application and is known to support great crested newts; the presence of which prevented the residential development of the site during the 1980's (source - http://myweb.tiscali.co.uk/cawoodcastlegarth/naturalhistory.html). There are 3 ponds within Cawood Castle Garth.

6.4.4 Water vole *Arvicola amphibious* has been recorded within 2km of the Application Site (Source: NEYEDC and NBN Gateway 2015).

6.4.5 Otter *Lutra lutra* has been recorded within 2km of the Application Site (source – NEYEDC and NBN Gateway 2015).

6.4.6 Barn owl *Tyto alba* and Kingfisher *Alcedo atthis* have been recorded within the 10km grid square SE53 (source: NBN Gateway 2015).

6.4.7 No reptile records were identified during the desktop study within the surrounding

10km grid square SE53 (source: NEYEDC and NBN Gateway, 2015).

6.4.8 UK Biodiversity Action Plan Species records

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

- Corn crake *Crex crex*
- Curlew *Numenius arquata*
- Skylark *Alauda arvensis*
- Reed bunting *Emberiza schoeniclus*
- Hedgehog *Erinaceus europaeus*
- Brown hare *Lepus europaeus*
- Harvest mouse *Micronomys minutus*
- Common toad *Bufo bufo*

6.5 Phase 1 Field Survey Results

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

- Scattered broad-leaved trees – A3.1
- Improved grassland – B4
- Tall ruderal vegetation – C3.1
- Standing water – G1
- Amenity grassland – J1.2
- Species poor defunct hedge – J2.2.2
- Fence – J2.4
- Dry ditch – J2.6
- Building – J3.6

6.5.2 Scattered broad-leaved trees – A3.1

6.5.2.1 Mature pedunculate oak *Quercus robur* trees are present along the boundaries of the Application Site within the remnant hedgerows. No cracks, holes or ivy growth were observed on these oaks. Within the small paddock young saplings have also been planted relatively recently with species including apple *Malus ssp* and cherry *Prunus sp*. Trees are also present adjacent to the Application Site and these trees are situated within gardens to the east of the development site and include ash *Fraxinus excelsior*, cherry *Prunus sp* and sycamore *Acer pseudoplatanus*.

6.5.3 Improved grassland – B4

6.5.3.1 The majority of the site comprises improved grassland which has previously been grazed by sheep and horses. The grassland is separated into two fenced paddocks however the composition of the grassland is similar in both areas. The grassland is dominated by perennial rye-grass *Lolium perenne* with timothy *Phleum pratense*, cock's-foot *Dactylis glomerata*, creeping bent *Agrostis stolonifera* and Yorkshire fog *Holcus lanatus* also present. The sward was less than 5cm in height at the time of the survey with little thatch observed. Forbs were rare within the grassland and restricted to white clover *Trifolium repens,* creeping buttercup *Ranunculus repens*, common mouse-ear *Cerastium fontanum* dandelion *Taraxacum agg* and nettle *Urtica dioica*. Daffodils *Narcissus sp* have been planted within the small paddock amongst the fruit trees.

6.5.4 Tall ruderal vegetation – C3.1

6.5.4.1 A small nettle patch is present within the eastern corner of the small paddock. Ruderal vegetation, again dominated by nettle, is also present along the hedge lines where the hedging has been lost, within the dry ditches and beneath the remaining hedges.

6.5.5 Standing water – G1

6.5.5.1 An infield pond (approximately 40m^2) is present within the large paddock (National Grid Reference: SE 56860 37545). No macrophytes were observed however submerged grasses were present within the pond providing potential egg laying medium for newts. Epiphytic algae growth was observed in the pond which suggests that it has the capacity to hold water during the spring and/or summer amphibian breeding season. No signs of poaching from livestock were observed.

6.5.6 Amenity grassland – J1.2

6.5.6.1 A small area of amenity grassland is situated to the east of the Application Site. The area is used for ball games and the grass is kept short, reducing its ecological value. The grass is dominated by perennial rye-grass with dandelion, daisy *Bellis perennis* and annual meadow-grass *Poa annua* also present within the sward. Other species present but restricted to the edges of the grassland were wood avens *Geum urbanum*, cleavers *Galium aparine* and broad-leaved dock *Rumex obtusifolius*.

6.5.7 Defunct hedge – J2.2.2

6.5.7.1 A defunct hawthorn *Crataegus monogyna* and hazel *Corylus avellana* hedgerow is located adjacent to livestock fencing forming the boundary of the paddocks to the south. The understory comprises ruderal species and rough grass with occasional common reed *Phragmites australis* also present. The remnant hedge is approximately 2m high and 1.5m wide with large gaps (>10m) present along the hedge line. Along the northern boundary of the Application Site and within the horse paddock, occasional hawthorns are all that remain of the hedgerow. They are approximately 1m high and appear to be kept short by browsing of livestock.

6.5.7.2 A public footpath is situated adjacent to the Application Site on the northern boundary. The defunct hedge to the north of this footpath is dominated by hawthorn and willow *Salix sp* which has grown out and is not being managed as a hedge.

6.5.7.3 Along the eastern boundary, the Application Site borders private gardens. Adjacent to the livestock fencing, some lengths of hawthorn dominated hedges are present forming the boundaries of the gardens. Some short stretches of these hedges have been managed and are intact (see Target Note 2).

6.5.7.4 These hedgerows offer potential breeding and roosting habitat for birds as well as providing a source of berries for birds, and small mammals. The hedgerows also provide potential foraging, commuting and dispersal habitat for amphibians, reptiles and bats.

6.5.8 Fence – J2.4

6.5.8.1 A wooden post and rail fence forms the boundary between the two paddocks. Post and wire livestock fencing forms the outer boundary of the two paddocks. A high metal fence surrounds the small amenity grassland area. The fences on the Application Site are of low ecological value and do not prevent dispersal through the site.

6.5.9 Dry ditch – J2.6

6.5.9.1 A shallow, dry ditch is present on the southern boundary where it runs for a short distance along the hedge line. Another shallow, dry ditch is present adjacent to the Application Site boundary to the north of the public footpath along the hedge line. Ruderal vegetation and rough grass grow within these dry ditches which provide potential commuting habitat.

6.5.10 Buildings - J3.6

6.5.10.1 Two garages are situated to the east of the play area. These single storey garages comprise corrugated cement fibre board roofs and cement fibre board walls. They are timber framed with timber doors and no gaps suitable for bats were observed. Ivy *Hedera helix* is present but is of insufficient structure to support roosting bats. Cotoneaster *Cotoneaster sp* and bramble *Rubus fruticosus agg* were also observed growing up the sides of the garages. This vegetation provides potential roosting and nesting habitat for birds.

6.5.10.2 The stable situated in the small paddock comprises a pitched felt roof and wooden walls. No gaps suitable for roosting bats were observed.

6.6 Species

6.6.1 The following species were recorded during the field survey:

- Common frog *Rana temporaria*

6.6.2 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
- Reptiles
- Badger
- Birds
- Hedgehogs

6.6.3 Bats

6.6.3.1 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.

6.6.3.2 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
- Frost damage
- Wounds
- Cankers
- Dense ivy growth
- Areas of but rot
- Dry knot holes
- Impact shatters
- Dense epicormic growth.

6.6.3.3 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.

6.6.3.4 Conclusions

6.6.3.4.1 Currently, the trees within the Application Site do not have feature suitable to support roosting bats. The two garages and the wooden stable also lack suitable features for roosting bats.

6.6.3.4.2 No potential roost sites exist within the Application Site, predominantly due to a lack of suitable features within the buildings and trees within the Application Site. The wider area supports a network of habitats including hedgerows, rivers, ditches, scattered trees, mature gardens and grasslands which offer alternate foraging and

commuting habitat for bats.

6.6.3.4.3 The remnant hedges and trees along the boundaries of the site provide foraging and commuting habitat for bats. However, the site is generally exposed and intensely grazed and consequently, the Application Site is not considered integral to the favourable population status of local bat populations.

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

6.6.4 Great crested newt.

6.6.4.1 Great crested newts have been recorded within 500m of the Application Site at the Castle Garth pond in the centre of the village

6.6.4.2 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.

6.6.4.3 Refuge search.

6.6.4.3.1 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.

6.6.4.4 Results.

6.6.4.4.1 It has been determined that a great crested newt population is currently present within 500 metres of the Application Site. 500 metres is within the range that great crested newt may travel to terrestrial habitat and/or other aquatic breeding sites. The upper range for dispersal is typically around 1.3km (Baker *et al* 2011) and usually concerns sub-adult newts unconcerned with breeding (Arntzen & Teunis 1993). Beebee & Griffiths, 2000, suggest that new sites are colonised rapidly. In many cases these young newts form the preponderance of the population, when recruitment is high. However, habitat connectivity between the Application Site and the current population at Castle Garth is poor due to the presence of road networks and residential properties which limit dispersal opportunities.

6.6.4.4.2 Currently, the Application Site offers suitable great crested newt habitat, with the presence of a pond, grazed pasture and good habitat connectivity to the wider countryside provided by networks of hedgerows and dry ditches. The epiphytic algae growth in the pond suggests that it has the capacity to hold water during the spring and/or summer breeding season. Great crested newts will readily use submerged grasses in which to lay eggs and they also offer a daytime refuge. The ephemeral nature of the pond mean predators will be significantly reduced. Wold Ecology has previously recorded breeding from similar ephemeral ponds. Consequently the occurrence of great crested newt occurring within the Application Site cannot be reliably ruled out.

6.6.4.4.3 The terrestrial habitat within the Application Site and along its boundaries is optimum for great crested newt as it provides, daytime refugia, foraging areas, hibernation areas and dispersal route ways. These features are typically associated with the hedgerows, trees, dry ditches, ruderal vegetation and back gardens of the neighbouring properties. The grassland offers good foraging potential for great crested newt particularly on molluscs, beetles and worms.

6.6.4.4.4 Four frogs were observed beneath a paving slabs on site (see target note 1). No great crested newts were observed.

6.6.5 Reptiles

6.6.5.1 The desktop study did not identify any records of reptiles occurring within the surrounding 10km grid square SE53. Reptiles are moderately localised within the surrounding area, but all four commonly occurring species (adder *Vipera berus*, common lizard *Zootoca vivipara*, grass snake *Natrix natrix* and slow worm *Anguis fragilis)* occur in Yorkshire.

6.6.5.2 Results

6.6.5.2.1 As would be expected from a survey in March, 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.

6.6.5.2.2 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 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.
- Due to British reptiles being diurnal they are sensitive to human disturbance, the close proximity to residential dwellings and lack of suitable refuge and

basking areas further decrease the sites value.

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

6.6.6 Badgers

6.6.6.1 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.

6.6.6.2 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

6.6.6.3 Results

6.6.6.3.1 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.

6.6.6.3.2 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.

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

6.6.7 Birds

6.6.7.1 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. In winter foraging birds, roosting birds and large aggregations of birds using a specific habitat are noted. In addition the habitat is assessed for its value to specific species, so that the likelihood of breeding can be analysed.

6.6.7.2 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*.

6.6.7.3 Schedule 1 Listed Birds

6.6.7.3.1 Wold Ecology assessed the site for schedule 1 listed species, 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.

6.6.7.3.2 Barn Owl *Tyto alba*

6.6.7.3.2.1 Barn owl presence is usually identified quite easily, without seeing the actual birds themselves. Droppings, pellets and feathers can be found at nest and roost locations. No evidence of barn owls was observed within the Application Site. Currently, the Application Site and habitat directly adjoining it supports no features suitable for nesting barn owls i.e. farm buildings or trees with large cavities. Currently, the trees and buildings within the Application Site do not contain cavities suitable for roosting or nesting. It is concluded that the Application Site is of low value to this species in respect to nesting and roosting.

6.6.7.3.2.2 There is a reduced possibility that the Application Site is used by foraging barn owls. The improved grassland provides some habitat for key prey species like field vole, common shrew and pygmy shrew although the current management of the grassland through grazing has resulted in very little thatch developing beneath the sward. No small mammal burrows were observed during the survey. The value of the site ultimately depends on where the nearest territory is in relation to the Application Site and its quality as a foraging habitat. The habitats within the Application Site are widespread in the local area and consequently, reliance on the Application Site is low.

6.6.7.4 **The Application Site is of low value to schedule 1 listed species other than possibly as a rarely used feeding or spill over feeding habitat for barn owls. The site is not considered to be of value to any other schedule 1 listed bird species.**

6.6.7.5 None-schedule 1 birds

6.6.7.5.1 The field survey carried out in March 2015 did not record any UK BAP Priority Species or Red or Amber listed species (high or medium conservation concern) as described in The Population Status of Birds in the UK (Birds of Conservation

Concern: updated 2009). However the following birds were recorded in the desktop study, and are also likely to use the Application Site or habitats associated with it:

- Reed bunting *Emberiza schoeniclus*
- Common kestrel *Falco tinnunculus*
- Blackbird *Turdus merula*
- Wren *Troglodytes troglodytes*

6.6.7.5.2 Impacts to birds

6.6.7.5.2.1 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 scrub and hedgerows.

6.6.7.5.3 Wintering Birds

6.6.7.5.3.1 The Application Site is not considered to be valuable to wintering birds like wildfowl and waders. The Application Site is intensively grazed and bounded by housing, intensively farmed land and a public footpath causing regular disturbance, reducing the value of the habitat for these species groups. Despite the presence of a small pond, the site is small and enclosed by remnant hedgerows to the north and south and residential housing to the east reducing its value to wintering wildfowl and waders. The only impact typically of any relevance to wintering birds is 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.

6.6.7.6 Wold Ecology does not recommend any further bird surveys.

6.6.8 Hedgehog

6.6.8.1 Legislation

6.6.8.1.2 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.

6.6.8.2 Survey Methodology

6.6.8.2.1 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.

6.6.8.2.2 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.

6.6.8.3 Results

6.6.8.3.1 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.

6.6.8.3.2 **No evidence of hedgehogs was recorded (likely due to the time of year), 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 8. 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 The Application Site supports a number of habitats, as described in section 6.5, which support a number of species and add to the overall ecological value of the site.

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

7.4.2.1 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.

7.4.2.2 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.

7.4.2.3 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	**Y**
	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	**Y**
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**

7.4.3 UKBAP Priority Habitats: Ponds

7.4.3.1 Description

7.4.3.1.1 Ponds, for the purpose of UK BAP priority habitat classification, are defined as permanent and seasonal standing water bodies up to 2 ha in extent which meet one or more of the following criteria:

- Habitats of international importance: Ponds that meet criteria under Annex I of the Habitats Directive.
- Species of high conservation importance: Ponds supporting Red Data Book species, UK BAP species, species fully protected under the Wildlife and Countryside Act Schedule 5 and 8, Habitats Directive Annex II species, a Nationally Scarce wetland plant species, or three Nationally Scarce aquatic invertebrate species.
- Exceptional assemblages of key biotic groups: Ponds supporting exceptional populations or numbers of key species. Based on (i) criteria specified in guidelines for the selection of biological SSSIs (currently amphibians and dragonflies only), and (ii) exceptionally rich sites for plants or invertebrates (i.e. supporting ≥30 wetland plant species or ≥50 aquatic macro invertebrate species).
- Ponds of high ecological quality: Ponds classified in the top PSYM category ("high") for ecological quality (i.e. having a PSYM score ≥75%). [PSYM (the Predictive SYstem for Multimetrics) is a method for assessing the biological quality of still waters in England and Wales; plant species and / or invertebrate families are surveyed using a standard method; the PSYM model makes predictions for the site based on environmental data and using a minimally impaired pond dataset; comparison of the prediction and observed data gives a % score for ponds quality].
- Other important ponds: Individual ponds or groups of ponds with a limited geographic distribution recognised as important because of their age, rarity of type or landscape context e.g. pingos, duneslack ponds, machair ponds.

7.4.3.1.2 Ponds are widespread throughout the UK, but high-quality examples are now highly localised, especially in the lowlands. In certain areas high quality ponds form particularly significant elements of the landscape, e.g. Cheshire Plan marl pits, the New Forest ponds, pingos of East Anglia, mid-Wales mawn pools, the North East Wales pond landscape, the forest and moorland pools of Speyside, dune slack pools, the machair pools in the Western Isles of Scotland, and examples of Habitats Directive Annex I pond habitats across Northern Ireland.

7.4.3.1.3 The pond within the Application Site has the potential to support species of high conservation concern (UK BAP priority species or Habitats Directive Annex II species) and if great crested newts are present, the pond within the Application Site will meet the UKBAP criteria.

7.4.3.1.4 Wold Ecology recommends that following the great crested newts presence/absence surveys, a detailed pond management plan should be produced for the site.

7.4.4 UKBAP Priority Habitats: Hedgerows

7.4.4.1 The remnant hedgerow on the southern boundary of the Application Site and the remnant hedgerow to the north of the footpath adjacent to the Application Site on the northern boundary are UKBAP priority hedgerows.

7.4.4.2 Description

7.4.4.2.1 A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide (Bickmore, 2002). Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country. Climbers such as honeysuckle and bramble are recognised as integral to many hedgerows, however they require other woody plants to be present to form a distinct woody boundary feature, as such they are not included in the definition of woody species. The definition is limited to boundary lines of trees or shrubs, and excludes banks or walls without woody shrubs on top of them.

7.4.4.2.2 Based on an analysis of Countryside Survey data, using the threshold of at least 80% cover of any UK native woody species, it is estimated that 84% of countryside hedgerows in GB would be included.

7.4.4.2.3 Hedgerows are a primary habitat for at least 47 species of conservation concern in the UK, including 13 that are globally threatened or rapidly declining, more than for most other key habitats. They are especially important for butterflies and moths, farmland birds, bats and dormice (where locally present).

7.4.4.2.4 Since 1945 there has been a continual decline in both the quantity and quality of the UK's native hedgerows either through removal or poor management practices. The Environment Act 1995 introduced an enabling power to protect important

hedgerows in Britain. Land managers are required to consult local authorities before hedgerows can be removed. Article 10 of the EC Habitats Directive requires member states to encourage the management of linear features such as hedgerows in their planning and development policies and, in particular, with a view to improving the ecological coherence of the Natura 2000 network. This is supported by the Habitats and Species Regulations 2010, which recognises the importance of these features for the migration, dispersal and genetic exchange of wild species. NPPF further encourages the development of policies for the management of hedgerows.

7.4.4.3 **UKBAP targets for hedgerows are:**

- Maintain the net extent of hedgerows across the UK
- Maintain the overall number of individual, isolated hedgerow trees and the net number of isolated veteran trees;
- Ensure that hedgerows remain, on average, at least as rich in native woody species
- Achieve favourable condition of 348,000 km (50%) by 2015
- Reverse the unfavourable condition of over-managed hedgerows across the UK by reducing the proportion of land managers who trim most of their hedges annually
- Halt further decline in the condition of herbaceous hedgerow flora in Great Britain by 2010 (and improve their condition by 2015)
- Improve the condition of the hedgerow tree population by increasing numbers of young trees (1-4 years) in Great Britain to 80,000 by 2015 and
- Achieve a net increase in the length of hedgerows of an average of 800 km per year in Great Britain to 2015.

7.4.4.4 If applicable, hedges 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. **Permission should be granted from the planning authority prior to removing a hedge.**

7.4.4.5 During the construction period, it is important that a root protection exclusion zone is in place adjacent to any hedgerow. This must be at least 5m from the centre of the hedge and must be kept free of plant and storage of building supplies.

7.4.4.6 Management

7.4.4.6.1 The existing hedgerows bounding the site should ideally be maintained to a minimum height of at least 2m and kept free of fertilisers, pesticides and development on land within 3m of the hedge centre. Wold Ecology recommends 'gapping up' and restoring the hedgerow along the boundaries. The following native woody hedge species are recommended:

- Blackthorn *Prunus spinosa*
- Dogwood *Cornus sanguinea*
- Hawthorn *Crataegus monogyna*
- Hazel *Corylus avellana*
- Holly *Ilex aquifolium*
- Dog rose *Rosa canina*

7.4.4.6.2 The long term management of these hedges will add to their biodiversity value. The hedge should be cut only once every three calendar years and should not be cut between the beginning of March and the end of August to ensure breeding birds are not disturbed. Hedge cutting should occur 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. Cutting the hedge in late January/early February will provide maximum quantities of food for birds over winter.

7.4.4.6.3 A 3m grass margin adjacent to the hedges adjacent within the Application Site should be encouraged and allowed to provide rough grassland dispersal routes and habitat for small mammals and prey for owls/raptors. The hedgerow should be cut during late summer (August/September) with all cuttings should be removed from the site to stop soil enrichment and the smothering of less competitive species of herb.

7.4.4.6.4 The grassland should be cut every 2-3 years, as part of the management program on a 2-3 year rotation, to avoid scrub encroachment. The grassland margins should be topped at 12cm to encourage tussocks.

7.5 Species

7.5.1 Great crested newt

7.5.1.1 The UK has only a small amphibian fauna. There are six species of amphibians, common frog, common toad, natterjack toad *Bufo calamita*, smooth newt, palmate newt *Triturus helveticus* and great crested newt. There are also several non-native amphibian species present in Britain.

7.5.1.2 The great crested newt is protected under European and British legislation. Under European legislation it is protected under EC Directive (92/43/EEC) 'The Conservation of Natural Habitats and of Wild Fauna and Flora', being listed under Annexes IIa and IVa. This is implemented in Britain under the Habitats and Species Regulations 2010. This prohibits the intentional killing of newts, the deliberate taking or destruction of eggs, damage or destruction of a breeding site or resting place, intentional/reckless damage to or obstruction of a place used for shelter or protection, possession of a great crested newt and any form of trade of great crested newts.

7.5.1.3 Under British legislation, the great crested newt is given full protection under section 9 of the Wildlife and Countryside Act 1981 (as amended). This Act transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the 'Bern Convention'). This prohibits the intentional killing, injuring or taking, possession or disturbance of great crested newts whilst occupying a place used for shelter or protection and the destruction of these places. Protection is given to all stages of life (e.g. adults, sub-adults, larvae, and ovae).

7.5.1.4 In combination, the above legislation prohibits the following:

- Intentionally kill, injure or take a great crested newt
- Possess or control any live or dead specimen or anything derived from a great crested newt
- Intentionally or recklessly damage, destroy or obstruct access to any structure

or place used for shelter or protection by a great crested newt
- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose
- Deliberately capture or kill a great crested newt
- Deliberately disturb a great crested newt
- Deliberately take or destroy eggs of a great crested newt
- Damage or destroy a breeding site or resting place of a great crested newt.

The great crested newt is therefore described as 'fully protected'.

7.5.1.5 Great crested newts, like all British amphibians, rely on water bodies for breeding, but otherwise spend much of their lives on land. They are ectotherms and have permeable skins, so most movement occurs when the air temperature is above approximately 5ºC and there is, or has recently been rain.

7.5.1.6 Amphibians spend the winter in places where they will be protected from frost and flooding. Whilst on land outside of the hibernation period, great crested newts will also take refuge to shelter from extremes of weather; hence during the day they will often rest in dense vegetation, under refuges or underground. Adult great crested newts normally begin moving from their over-wintering land sites between February and April, with some adult newts not reaching the desired water body until May, depending on the weather. Not all life-stages enter water over the course of a year; immature newts (or efts) may spend all year on land.

7.5.1.7 Whilst it is not possible to demonstrate site absence from a single scoping survey, with the evidence collected from the desktop study and the presence of a suitable breeding pond and terrestrial habitat within the Application Site, the likelihood of the presence of great crested newts in the Application Site is increased. Key attributes to the increased probability of great crested newts being present are:

- Good adjacent terrestrial habitat
- Good habitat connectivity
- Minimal impact from waterfowl
- Lack of fish
- Lack of shade
- Records of great crested newts within 500 m of the Application Site.

7.5.1.8 **Wold Ecology recommend that a great crested newt presence/absence survey is undertaken on all ponds within 500m of the Application Site, prior to development work commencing.** The recommended great crested newt surveys must follow survey methods based on the guidance contained within 'Great Crested Newt Mitigation Guidelines' *English Nature*, 2001. The survey work will involve the following elements:

- Make an accurate and comprehensive assessment of the potential for great crested newts on the site and the likelihood of their presence within the development boundaries.
- Undertake four surveys of the site for great crested newt, including all ponds within 500m of proposed development. This includes seasonal ponds.
- An additional two surveys will be required if great crested newts are present. This is in order to assess the population size and is required to support any subsequent Natural England license.
- Submit a report detailing the above and offer a non-technical summary of the legal implications behind any great crested newt presence
- Make any initial recommendations for potential mitigations required in the

light of survey and report, especially with regard to the need for a Natural England license.

- The requirement for great crested newt presence or absence surveys should be included on any planning decision letter. A great crested newt ecologist will be present on site during the initial start of works; in order to provide advice to contractors, managers and implement any subsequent mitigation strategies.

7.5.1.9 Field Survey Methods.

7.5.1.9.1 Egg Search - This method involves searching both live and dead submerged vegetation for great crested newt eggs. English Nature (2001) state that 'this is often a very effective method for detecting great crested newt presence'. English Nature (2001) also state that the optimum time for egg searches is between 'April and June'.

7.5.1.9.2 Bottle Trapping - This method involves setting bottle traps (normally made from 2-litre plastic bottles) around the pond margin, and leaving the traps set overnight. A density of one trap per two metres of shoreline is recommended for general survey purposes. This is a particularly reliable method for detecting the presence of great crested newts.

7.5.1.9.3 Torch Survey - This method involves searching for great crested newts at night by shining a torch in the pond. In clear ponds this can be a simple and very effective way of detecting newts.

7.5.1.9.4 Netting - Using a long-handled dip-net, great crested newts can be captured by sampling the area around the pond edge. Netting can be conducted by day or night, but better results may be obtained at night when adult newts are more likely to be in open water. There should be at least 15 minutes of netting per 50m of shoreline.

7.5.1.9.5 English Nature (2001) recommends at least 3 of the 4 field survey methods are undertaken during each visit. Four visits are required to determine the presence/absence of great crested newts and these must be undertaken during suitable weather conditions and between the months of mid March to mid June; with at least two of these visits occurring between mid April and mid May.

Method.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Egg search.												
Bottle trapping.								(L)	(L)			
Torch survey.								(L)	(L)			
Refuge search.												

Most effective	Less effective	Not effective	Larvae search	(L)

7.5.2 Birds

7.5.2.1 Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for UK birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to, kill, injure or take any wild bird, take, and damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird.

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.

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
Schwegler swift box #25	Brick building box	2

7.5.2.4 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.

7.5.2.5 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. 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 and during early November.

7.6 Trees

7.6.1 Any trees to be retained and trees on adjacent land should be protected by barriers erected following guidelines given in BS5837:2012 "Trees in Relation to Construction". English Nature (2000) recommends that 'an exclusion zone of 15 times the diameter of the tree at breast height is created'. This will protect the roots from compaction and physical damage whilst protecting the tree from fertilizers and chemical applications. The latter can have a detrimental effect on the trees relationship with lichens and mycorrhizal fungi. Root protection zones should be free of plant, storage of building sundries and excavation works should be limited where possible; this will help preserve the life of the trees.

7.6.2 The tree planting scheme has yet to be devised and should target local provenance and native species. In addition, fruit bearing trees and shrubs should be considered to increase winter food sources for birds. The landscaping plan should consider habitat connectivity to other sites and enhance dispersion of fauna. Suitable trees to plant include:

Species	Height	Comments
Blackthorn *Prunus spinosa*	3m	Important scrub coloniser.
Dogwood *Cornus sanguinea*	3m	Thrives on calcareous soils and provides nesting cover.
Hawthorn *Crataegus monogyna*	9m	Very tolerant and provides bird food.
Hazel *Corylus avellana*	6m	Thrives on calcareous soils.
Holly *Ilex aquifolium*	15m	Prefers drier soil, useful sub canopy tree.
Crab apple *Malus sylvestris*	6m	Bird, insect and small mammal food.
Dog rose *Rosa canina*	3m	Food for birds and insects.
Rowan *Sorbus aucuparia*	9m	Tolerates exposed sites. Bird and insect fruit.

7.6.3 Apple trees

7.6.3.1 Historical data gathered from England show that over the whole country orchard area has declined by 57% since 1950 (English Nature 2005). Orchards are hotspots for biodiversity in the countryside, supporting a wide range of wildlife and containing BAP priority habitats and species, as well as an array of Nationally Rare and Nationally Scarce species. The wildlife of orchard sites and apple trees depends on the mosaic of habitats they encompass, including fruit trees, scrub, hedgerows, hedgerow trees, the orchard floor habitats, fallen dead wood and associated features such as ponds.

7.6.3.2 The planting of additional apple trees around the site will attract woodland edge species such as bullfinch *Pyrrhula pyrrhula* and song thrush *Turdus philomelus*. English Nature (2005) state that pipistrelle *Pipistrellus pippistrellus* and noctule *Nyctalus noctula* bats forage over orchards, both of which are protected species and protected within the biodiversity action plan.

7.6.3.3 The soft landscaping scheme should consider the planting of apple varieties that tolerate the northern climate and are local, Yorkshire varieties. These include:

Cockpit.	Bramley Seedling.	Ribstan Pippin.
Peasgood Nonsuch.	Ellison's Orange.	Warner's King.
Dogsnout.	Bess Pool.	Fillingham Pippin.
Sykeshouse Russet.	Balsam.	Allington Pippin
Stamford Pippin.	Barnack Beauty.	Yorkshire Aromatic.
Arram White.	Flower of the Town.	Beverley Pippin.

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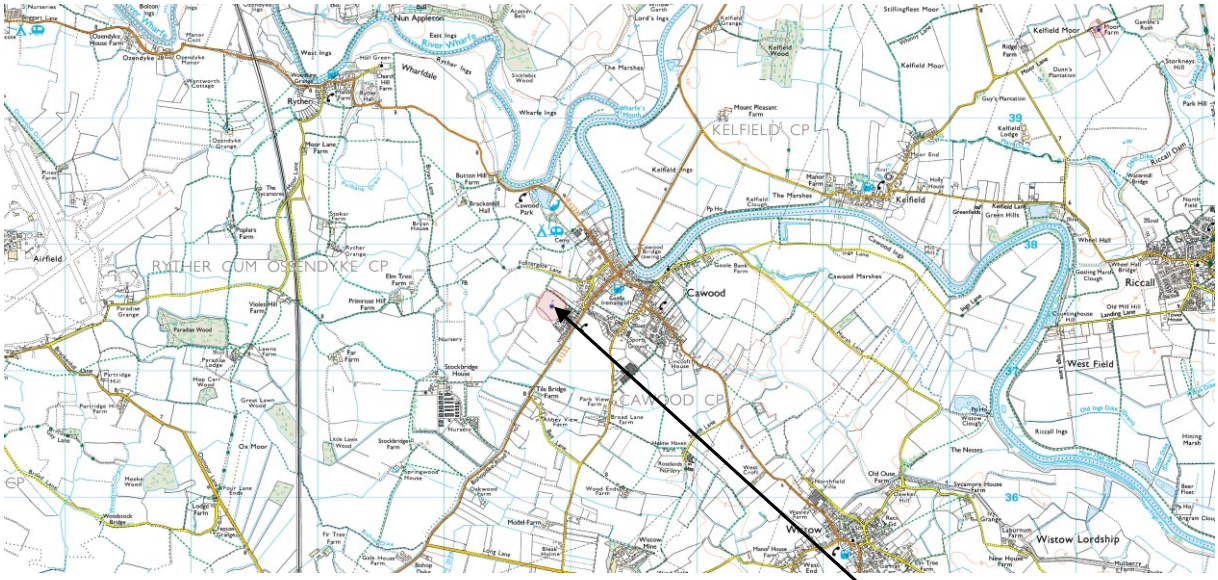
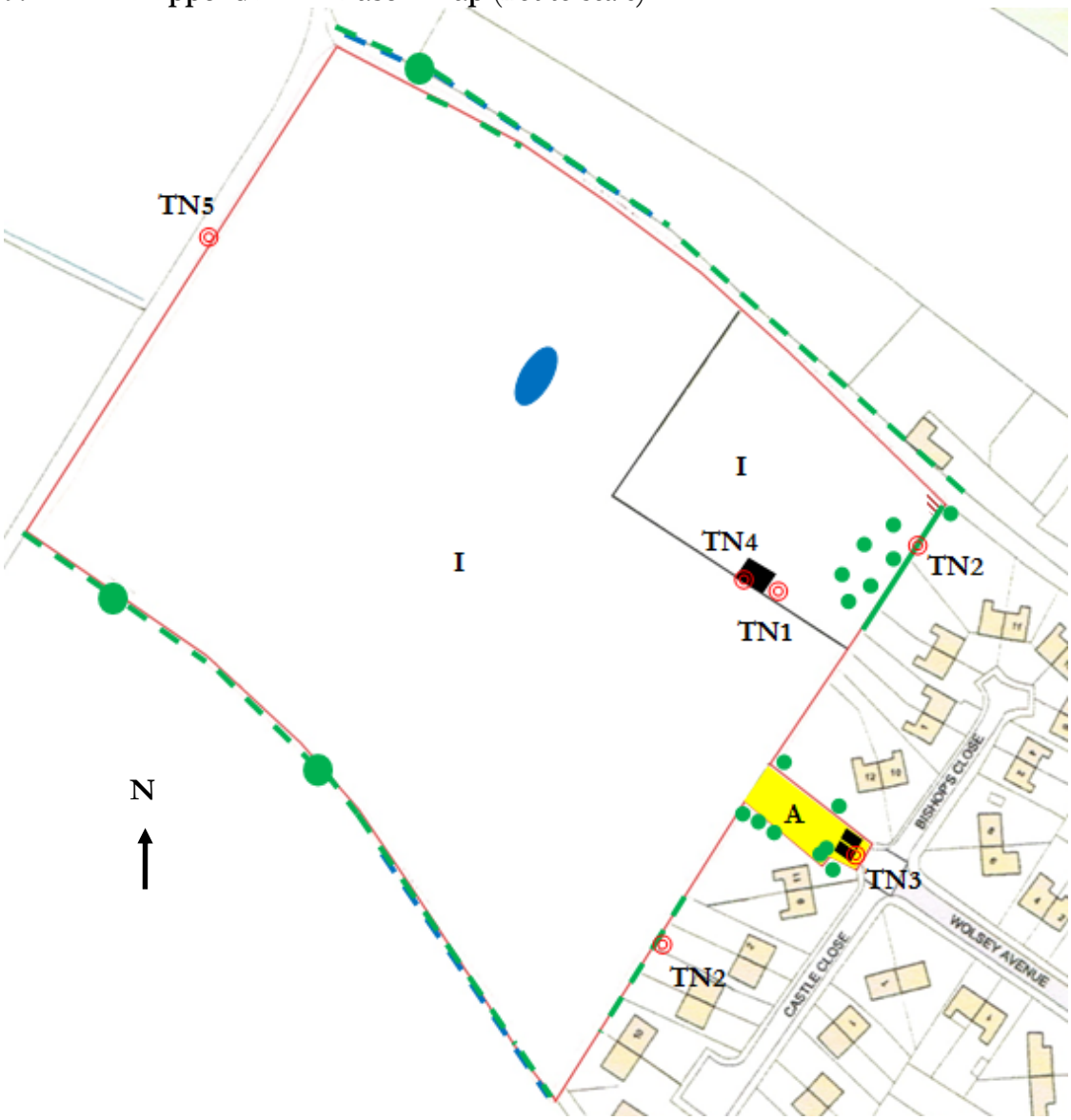
9.0 APPENDICES

9.1 Appendix 1 –Site location

N



9.2 Appendix 2 - Phase 1 Map (not to scale)



KEY

I	Improved grassland
A	Amenity grassland
	Tall ruderal
	Standing water
	Buildings
	Scattered trees
	Target note
	Defunct hedge
	Intact hedge
	Dry ditch
	Site boundary

Target Note 1: Four common frogs *Rana temporaria* were found beneath concrete slabs in the small paddock.

Target Note 2: Lengths of hawthorn hedge forming neighbouring garden boundaries.

Target Note 3: Two single storey timber framed garages with corrugated cement fibre board roofs and cement fibre board walls. No gaps suitable for bats were observed. Ivy *Hedera helix* is present but its structure is insufficient to support bats.

Target Note 4: Wooden stable comprising a pitched felt roof and wooden walls with no suitable features for roosting bats observed.

Target Note 5: No hedge was observed along the length of this boundary.

9.3 Appendix 3 – Species encountered during field work

9.3.1 Botanical species list

Scientific name	**Common name**
Acer pseudoplatanus	Sycamore
Agrostis stolonifera	Creeping bent
Anthriscus sylvestris	Cow parsley
Bellis perennis	Daisy
Cerastium fontanum	Common mouse-ear
Corylus avellana	Hazel
Cotoneaster sp	Cotoneaster
Crataegus monogyna	Hawthorn
Dactylis glomerata	Cock's-foot
Epilobium sp	Willowherb sp
Fraxinus excelsior	Ash
Galium aparine	Cleavers
Geum urbanum	Wood avens
Hedera helix	Ivy
Holcus lanatus	Yorkshire fog
Ilex aquifolium	Holly
Lolium perenne	Perennial rye-grass
Malus sp	Apple
Narcissus sp	Daffodil
Phleum pratense	Timothy
Phragmites australis	Common reed
Poa annua	Annual meadow-grass
Prunus sp	Cherry
Quercus robur	Pedunculate oak
Ranunculus repens	Creeping buttercup
Rubus fruticosus agg	Bramble
Rumex obtusifolius	Broad-leaved dock
Salix sp	Willow
Stellaria media	Common chickweed
Taraxacum agg	Dandelion
Trifolium repens	White clover
Urtica dioica	Common nettle

9.3.2 **Other**

Rana temporaria	Common Frog

9.4 Appendix 4 – Summary of desktop study

Organisation	Response Summary	Date
Natural England	Local designations	March 2015
Natural England	UKBAP species and habitats within 2 km of the Application Site.	March 2015
North and East Yorkshire Ecological Data Centre	Species lists within 2 km of the Application Site	March 2015
National Biodiversity Network	Species lists within 2 km of the Application Site	March 2015

9.5 Appendix 5 - 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)

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.

9.6 Appendix 6 - Staff Profiles

Surveyor Profile – Chris Toohie M Sc., MCIEEM.
Job title : Director.

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, writing and implementing bat development licenses, bat sound analysis and monitoring
- Great crested newt and reptile surveys.
- Management planning, woodland and orchard management and community environmental projects including funding applications.

Qualifications.

- M Sc. Arboriculture and Community Forest Management.
- HND Countryside Management.
- Great Crested Newt License – CLS 00887.
- Bat License – CLS 887.

Professional Membership.

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

Career Summary.

- Chris has worked in the environmental sector for all of his working life. He is an experienced and competent site manager with well-developed organisational skills and a proven ability to deal with a variety of situations in pressurised and challenging environments. As the former site manager of Millington Wood Site of Special Scientific Interest (SSSI), Beverley Parks

Millennium Orchard and three reserves on the Flamborough Head Heritage Coast/SSSI, Chris has gained an understanding of the functioning of local government and the skills to operate within such structures and multicultural environments. Chris completed over 14 years within local authority countryside services.

- Chris has also instigated accreditation from the Forest Stewardship Council at all East Riding of Yorkshire Council owned woodlands. As group manager, Chris ensures compliance with the UK Woodland Assurance Standard and demonstrates that the woodlands are managed in a socially, economically and environmentally sustainable manner.
- Chris is currently heavily involved in local projects and has volunteered his time and resources to benefit local conservation projects that include The Wolds Barn Owl Study Group, North Cliff Marsh Flamborough and apple conservation. As a trustee of Driffield's Millennium Green, Chris has allocated his own time and financial resources to enhance the ecological value of the site.
- Chris is an excellent communicator and his enthusiasm for his work has enabled the successful deliverance of numerous conservation schemes. Chris has been instrumental in raising over £100,000 for environmental and community projects since 2005. These have included grants from Natural England, landfill tax credits and Heritage Lottery funding.

Project Experience in last 5 years.

- Chris has undertaken over 300 bat activity surveys since 2006 including writing and implementing Natural England bat development licenses. Successful projects have included the conservation of maternity roosts at Low Catton, Watton, Harwood Dale, Woodhall Spa and Myton on Swale.
- Phase 1 surveys and biodiversity assessments have included National Nature Reserves, SSSI's, local wildlife sites and urban sites; specifically Chris has undertaken ecological surveys at Raincliffe Wood SSSI, sections of Hadrian's Wall and numerous English Heritage Castles. Reports have also meet BREEAM/CODE criteria, when applicable.
- Contracts have included Natural England, English Heritage, East Riding of Yorkshire Council, Scarborough Borough Council, NPS London, Hull City Council, Gateway, Riverside Housing, IMS Windpower, Kier London Ltd, NHS, Castle Howard Estates, Stroma and Pell Frischman.

Surveyor Profile – Emily McGregor B Sc (Hons)

Job title: Ecologist.

Expertise.

- Phase 1 and Phase 2 (NVC) habitat surveys, habitat monitoring surveys, botanical surveys and biodiversity assessments.
- Protected species surveys and preparation of Natural England European Protected Species Licence Application documents.
- Management planning and habitat management.
- Land management advise and biodiversity enhancement schemes
- Community environmental projects.

Qualifications.

- B Sc (Hons) Environmental Management

Career Summary.

- Emily is an experienced ecologist who has been employed in nature conservation/environmental management since 2003.
- Project managing the Ardler Urban Ranger Project - Emily developed strong partnerships with a range of agencies to achieve common objectives. The project supported the regeneration of a deprived area of Dundee through environmental projects designed to engage the community with their local environment whilst providing both health and social benefits. Emily led environmental education events and co-ordinated community volunteer environmental projects. She also promoted management of the Sustainable Urban Drainage System (SUDS) to maximise its potential for wildlife, water management and amenity value.
- Being raised on a farm on the Yorkshire Wolds, Emily has a deep understanding of the agricultural sector. This valuable knowledge has been an important asset to Emily when working with farmers on environmental stewardship projects.

Project Experience in last 5 years.

- Working as an associate ecologist for Wold Ecology Emily has undertaken a wide range of surveys for species including bats, water vole, badgers and great crested newt. This includes writing and contributing towards mitigation strategies and habitat enhancements where appropriate.
- Emily has undertaken numerous Phase 1 surveys and biodiversity assessments as well as undertaking NVC surveys of SSSIs in a range of habitats.
- Project work has included carrying out botanical surveys for DEFRA's Habitat Surveillance Pilot Project across East Yorkshire and North Lincolnshire. Emily has also written several biodiversity enhancement schemes and advised on environmental employment opportunities within Dewsbury Country Park. Emily has also carried out botanical surveys and produced management plans for Higher Level Stewardship agreements as well as undertaking an ecological assessment of arable reversion grassland within the Norfolk Coast AONB.
- Emily is currently volunteering her time through the Yorkshire Wildlife Trust to support the Wolds Grassland Partnership by liaising with local land managers and carrying out site visits to gather data and support for a landscape scale grassland restoration project.

9.7 Appendix 7 – 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.

NATIONAL POLICY

Planning Policy Statement 9: Biodiversity and Geological Conservation (PPS

9)

Protected Species PPS9 provides guidance to planning authorities when considering biodiversity and geological conservation:

Protected species are referred to in PPS9 and its associated ODPM Circular 06/20057 . This guidance states that:

'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat'.

It also states that:

'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted'. 'The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests.'

Species and Habitats of Conservation Concern

PPS9 states that:

'Other species have been identified as requiring conservation action as species of principal importance for the conservation of biodiversity in England. Local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents. Planning authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result unless the need for, and benefits of, the development clearly outweigh that harm.'

Furthermore the ODPM Circular 06/2005 states that:

'The potential effects of a development, on habitats or species listed as priorities in the UK Biodiversity Action Plan (BAP), and by Local Biodiversity Partnerships, together with policies in the England Biodiversity Strategy, are capable of being a material consideration in the preparation of regional spatial strategies and local development documents and the making of planning decisions.'

General Biodiversity Interest

One of the key principles of PPS9 includes the following statement:

'The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against,

appropriate compensation measures should be sought.'

Note that the statement refers to 'biodiversity interest', not just protected species and habitats and other species and habitats of conservation concern. A species may be of biodiversity interest, but the animal and/or its habitat may not be formally protected under current wildlife legislation.

Without suitable mitigation and/or compensation being proposed to offset potential damage to biodiversity interest, PPS9 directs local authorities to refuse planning permission:

'If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.'

9.8 Appendix 8 – Evaluation criteria.

Guidelines for ecological evaluation and the assessment of impacts have been published by Institute of Environmental Assessment (1995) and the Institute of Ecology and environmental Management (Regini 2000 and IEEM 2002).

Legislative Framework.
Species, communities, or habitats receiving legal protection under UK or EC law have high importance on national (and international) scales.

Species with special protection under UK law are listed on the schedules of the Wildlife and Countryside Act 1981 and amendments. The act also gives rise to statutory site designations i.e. National Nature Reserves, Sites of Special Scientific Interest, Areas of Special Protection for Birds, and orders e.g. Limestone Pavement Orders.

Species, communities or habitats requiring protection under EC law are listed on schedules I and II (whose conservation requires the designation of Special Areas of Conservation), IV (species in need of strict protection) and V (species whose exploitation may be subject to management measures) of the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC). The enabling legislation for the UK is the Conservation of Habitats and Species Regulations 2010. Species may also be scheduled under Appendix 1 of the Convention on the Conservation of European Wildlife and Natural Heritage 1979 (Bern Convention).

Other sites of international importance designated under international obligations include Biosphere Reserves (UNESCO Man and Biosphere Programme), Ramsar Sites (Convention on Wetlands of International Importance especially as Wildfowl Habitat 1971) and Special Protection Areas (EC Wild Birds Directive 79/409).

UK Site Designations.
Sites of national importance include the statutorily designated Sites of Scientific Interest (SSSI) and National Nature Reserves (NNR's).

Lower levels of importance attach to locally designated sites such as those non-statutory site designations applied by Local Authorities or Wildlife Trusts e.g. Sites of Importance for Nature Conservation (SINC's or equivalent) or Local Nature Reserves designated under the National Parks and Access to the Countryside Act

1949. Such sites may be considered to be of High Local Importance i.e. important at the county or metropolitan level (Regini 2000).

Rarity of Species and Habitats.
The British Red Data Book for vascular plants (Perring and Farrell, 1983) lists 317 species or subspecies as extinct, endangered, vulnerable and rare. Nationally rare species are defined as occurring in 1-15 10 km squares of the national grid in Britain, nationally scarce species occurring in 16 - 100 10 km squares. The presence of a breeding population of any nationally rare species is of national importance whereas a breeding population of a nationally scarce species is of regional importance. Assemblages of 2 or more species may increase the importance of a site further.

Regional rarities are defined as occurring in 15 or fewer localities or 1 km squares in a former Nature Conservancy Council region (NCC, 1989).

Biodiversity: The UK Steering Group Report contains a "Long List" of key species in the UK that fall into 1 or more of the following categories: threatened endemics or globally threatened; where the UK holds greater than 25% of the world population; where numbers or range have declined by more than 25% in the last 25 years; nationally rare species; and statutorily protected species. Presence of viable populations of such species may be of high importance.

County floras and biodiversity action plans, or district action plans may identify species that are rare at the county or district level. Viable populations will therefore have conservation importance in these contexts.

Further information on species rarity may be found in Scarce Plants in Britain (Stewart et al 1994) and the Atlas of the British Flora (Perring and Walters, 1962) and subsequent revisions.

Biodiversity: The UK Steering Group Report has identified a number of key habitats under the following criteria: those for which the UK has international obligations; rare habitats or those with high rates of decline; functionally critical habitats (marine areas); and habitats that are important for key species. Sites containing good examples of viable areas of any key habitat may be considered nationally important.

Importance may be attached to plant community types defined in the National Vegetation Classification (Rodwell, 1991 etc.) that are also described as rare, declining or with restricted distributions or are identified as being of particular botanical importance (NCC, 1989).

Criteria for Overall Site Evaluation.
The accepted criteria for site evaluation are set out by Ratcliffe (1977) in a Nature Conservation Review and are also explained in Guidelines for the Selection of Biological SSSI's (NCC, 1989). The principal criteria are briefly outlined below:

Naturalness. Truly natural habitats are valued highly but are rare in Britain and most sites are modified and semi-natural at best. Physical habitat modifications vary greatly in their impact, some being beneficial whilst others are harmful. A greater degree of conformity of a particular community or site with semi-natural rather than highly modified vegetation types in the National Vegetation Classification (NVC) and the absence of species indicating disturbance are likely to

lead to attachment of higher importance. However, note that communities that appear to be intermediate between semi-natural NVC types are not necessarily of lesser quality.

Size. The area of a site or habitat judged to be viable varies greatly between different habitat types and with factors such as the condition of the habitat, the shape of the habitat area and surrounding land use. In addition, the territorial requirements of particular species within the site/habitat and habitat management factors may need consideration.
In general, larger sites or areas of habitat tend to be valued more highly because of the greater population sizes and hence more robust populations of the species within them; the potential for increased site or habitat diversity and hence greater species-richness over a larger area; and a reduced importance of edge effects (pollution drift, habitat degradation/change for other reasons at the site edge) if the site is block rather than ribbon shaped. Small sites become increasingly important in areas of little semi-natural habitat.

Rarity. Criteria for rarity of species and habitats are outlined above. The scarcer the habitat or species then the higher the level of importance attached.

Diversity. Diversity tends to be valued positively as it increases. At the phytosociological level, some habitats are more species-rich than others and so have a higher value, provided that the richness does not involve non-native species. Some plant communities are intrinsically more species-rich than others so comparisons should only be made between the same community types.
The standard of floristic diversity is guided by the floristic tables within the National Vegetation Classification (NVC) (Rodwell, 1991 etc.). A community having more than 75% of the total plant species list for its type in the NVC would be rated very highly. Diversity of different communities within a vegetation formation (e.g. woodland) may also be rated highly as may structural diversity (e.g. rides, glades and differing age structures or canopy layering in woodland). Habitat diversity across a site may also increase its importance.

Fragility. Fragility is a measure of the intrinsic sensitivity of nearly all natural and semi-natural habitats and species to human impact. It is the fragility of such habitats and species which causes them to be more highly valued than any of the artificial substitutes which replace them through human activity; and the greater their fragility the greater their value. Fragility is therefore clearly related irreplaceability or non-recreatability. Re-creation of habitats that have taken centuries to develop, sometimes with centuries of traditional management, is impossible to the full extent of their former complexity.

Typicalness. Typicalness is an indication of how characteristic the features of a site are compared to its particular ecosystem. It is intended as a guard against designation of those sites with unusual features as being always the most important.

Position in an Ecological/Geographical Unit. This is a landscape ecological criteria designed to identify sites or habitats which may be important to maintaining the viability of a larger group thereof; or which is essential in maintaining the population of a species with a large territory spanning several sites; or is one of a number of sites important to a metapopulation of a species in fragmented landscapes; or may be important in a wildlife corridor or network of habitat patches.

Amenity Value

The amenity value of a site in ecological terms is generally seen as its value for the study or quiet enjoyment of wildlife. Sites with high intrinsic appeal and good access are therefore regarded as important in this context. Also important are issues such as site safety, proximity to schools and population centres and site management difficulties.