WOLD ECOLOGY LTD

2 Redwood Gardens, Driffield,
East Riding of Yorkshire. YO25 6XA
01377 200242

Chris Toohie M Sc. MCIEEM
chris.toohie@woldecology.co.uk
www.woldecology.co.uk

Grange Farm, East Newton, East Yorkshire

PRELIMINARY ECOLOGICAL APPRAISAL

July 2020

	Staff Member	Position
Extended Phase 1 Habitat Survey and Preliminary Ecological Appraisal :	Daniel Lombard BSc MCIEEM	Ecologist
Report prepared by :	Chris Toohie MSc MCIEEM Daniel Lombard BSc MCIEEM	Ecologist
Signed off by :	Chris Toohie MSc MCIEEM	Signature protected
Notes :	This report contains sensitive information concerning protected species and caution should be exercised when copying and distributing to third parties.	

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 In July 2020, Wold Ecology was commissioned by Richard Caley to undertake an extended phase 1 habitat survey and a preliminary ecological appraisal at Grange Farm, (national grid reference TA 26581 37944) in East Newton, East Yorkshire.

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

1.3 The habitats within the Application Site comprise amenity grassland, semi-improved grassland, bare ground and buildings, located in a rural landscape.

1.4 The proposed development involves site clearance and the creation of a commercial diving centre, including services and infrastructure.

1.5 The field survey and ecological appraisal targeted the following species and habitats relevant to the Application Site and the development proposal. The field surveys and preliminary ecological appraisal results are summarised below:

		Application Site Status
Natural England Development License Required prior to building works – Barn 3	**Bats**	**As <u>barn 3</u> supports common pipistrelle day roosts, any works that will disturb, modify or permanently lose the roosts <u>will</u> require a development licence from Natural England. It is also possible that individual bats could turn up roosting in other parts of the barn and or wider site at other times of year.** A licence will be obtained prior to the following works commencing on the barn 3: • Exclusion of bats and destructive searches by a bat licensed ecologist • Roof stripping and maintenance work • Erection of scaffolding adjacent to the building and within 5m of a roost • Pointing of masonry • Soft strip • New windows and doors • Internal conversion The roosts will be disturbed and destroyed as part of the proposed conversion and structural repair work to the barn. Details of appropriate mitigation to be included in the Natural England licence application are outlined in section 7.0. See Grange Farm Bat Report, 2020.
Mitigation required	**Barn Owl**	Immediately prior to development works taking place an inspection by a qualified barn owl surveyor should be made to ensure the status of barn owls has not changed since the initial survey. To enable continuity of the roost site, a nest box should be erected on site (within c.200 metres of the barn 3) at least 30 days before disturbance works begins. This alternative provision must remain available to the birds until at least 30 days after permanent provision has been made within the development.

Proceed with caution, timing constraints	**Birds**	The site is suitable for nesting birds with various designations. Any trees, shrubs, tall vegetation and buildings to be removed should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between mid-September and early 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.
No ecological constraints.	**Badger**	No further surveys recommended.
	Great crested newt	
	Reptiles	
	Habitats	There are no Statutory or non-statutory sites located within or adjacent to the Application Site. No Biodiversity Action Plan habitats are located within or adjacent to the Application Site.

1.6 This report is valid until **January 2022**. After this time, additional surveys need to be undertaken to confirm that the status of the site for protected species, site habitat composition and conclusions within this report have not changed.

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

2.0 INTRODUCTION

2.1 In July 2020, Wold Ecology was commissioned by Richard Caley to undertake an extended phase 1 habitat survey and a preliminary ecological appraisal at Grange Farm, (national grid reference TA 26581 37944) in East Newton, East Yorkshire.

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

- National Planning Policy Framework (NPPF): Conserving and Enhancing the Natural Environment.

2.3 To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

2.4 When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

2.5 The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

2.6 In addition, an ecological assessment is also required so that the local authority comply with the Habitats and Species Regulations 2017 (as amended) and to have regard to the purpose of conserving biodiversity in the exercise of their functions (Natural Environment and Rural Communities (NERC) Act 2006).

2.7 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, during 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.

2.8 The LPA has to assess whether the development proposal would breach Article 12(1) of the Habitats Directive. If Article 12(1) would be breached, the LPA would have to consider whether Natural England was likely to grant a European protected species licence for the development; and in so doing the LPA would have to consider the three derogation tests:

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 LPA 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'.

2.9 Relevant Case Law

- Woolley v Cheshire East Borough (2009).
- R. (Morge) v Hampshire County Council (2011).
- Prideaux v. Buckinghamshire County Council and Fcc Environmental UK Limited (2013).

2.9.1 The rulings summarise 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.'

2.9.2 The conclusion of the judgement is that LPAs must ensure that the option/alternative that best takes into account all the relevant considerations (not just EPS) should be the preferred option assuming that the other two tests specified in Article 16 (1) are also met.

2.9.3 The judgements 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.

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

- A desktop study and consultation.
- Field survey including accessible adjacent land up to 1km.
- The scope of the ecology survey is proportionate to the scale of the likely ecological effects and in this case, is 2km from the Application Site.
- An extended phase 1 habitat survey.
- Preliminary ecological appraisal.

2.11 The following principles which underpin an Ecological Impact Assessment (EcIA) are included within this assessment:

- Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).
- Mitigation - Adverse effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.
- Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.
- Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.
- Determine the importance of ecological features affected, through survey and/or research;
- Assess impacts potentially affecting important features.

2.12 It is not always necessary to produce a report following a preliminary ecological appraisal as the data collected could be written up directly in an Ecological Impact Assessment (EcIA) report instead. A preliminary ecological appraisal is normally used to inform the EcIA, however impact assessments are included within this report. Where further ecological surveys have been recommended, the impact assessment will be included within those specific reports.

2.13 This report format identifies, quantifies and evaluates the potential effects of development-related or other proposed actions on habitats and species. This report includes detailed assessment of ecological effects and commitment to mitigation – subject to any further ecological surveys and identified constraints.

2.14 This report describes the findings of the field survey and desktop study whilst identifying the requirement for further ecological surveys to ensure that a comprehensive study is undertaken.

2.15 Wold Ecology Ltd average 60 Preliminary Ecological Appraisals annually (period 2015 – 2020) and this report format and content within has been accepted Local Authority planning ecologists.

3.0 COMPANY PROFILE

3.1 Wold Ecology Ltd was established in 2006 and are experienced in providing a bespoke service for environmental management and ecological assessments. Wold Ecology employs several experienced and qualified staff/associates to undertake specialist ecological contracts.

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 which 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 and Ecological Impact Assessments.
- **European Protected Species Licenses**
  Bat Licenses - Chris Toohie is one of 186 Natural England Registered Consultant (February 2020) who can hold a Natural England Bat Mitigation Class Licence.
  Great crested newt development license holders. Implementation of licenses (amphibian fencing, destructive searches, watching briefs and post development monitoring).
- **Arboricultural Surveys.**
  Arboricultural Impact Assessments, Root Protection Zones and CAD drawings.
- **Ecological Construction Method Statements and Ecological Enhancements Plans.**
- **Ecological Clerk of Works.**

3.3 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, Filey Bird Observatory, Cornfield Project (Ryedale Folk Museum), Butterfly Conservation (Yorkshire Branch) and RSPB projects with volunteer staff time and financial resources. Wold Ecology has adopted an important site for nature conservation on Flamborough Head.

3.4 Wold Ecology is an Associate Member of the RSPB and Corporate Member of the Bat Conservation Trust.

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

3.5.1 Job title: Senior Field Ecologist.

3.5.2 Expertise.

- Phase 1 habitat field surveys and biodiversity assessments including BREEAM assessments.
- Bat surveys, bat ecology, bats and wind turbine assessments, bat sound analysis and monitoring.
- Great crested newt and reptile surveys.
- Mammal surveys including water vole, otter, and badger.
- Ornithological surveys including bird ringing (ringing officer at Filey Bird Observatory).

- Invertebrates studies, principally Lepidoptera, Odonata, Coleoptera and Diptera plus habitat management/creation for these groups.
- Management planning, pond, and wetland management.

3.5.3 Qualifications.

- B Sc. Environmental Science.
- Great Crested Newt License – 2015-17182-CLS-CLS
- Bat License – 2015-11490-CLS-CLS
- Bird Ringing A Licence – A/6298

3.5.4 Professional Membership.

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

3.6 A detailed surveyor profile is included in Appendix 5.

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

- Holding a Bachelor of Science degree (hons) in Environmental Science;
- Being employed as a practising ecologist since 2007, with over 10 years' relevant experience and;
- Being a full member of the Institute of Ecology and Environmental Management (this makes him subject to peer review and bound by a professional code of conduct).

3.8 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 PHASE 1 HABITAT SURVEY METHODOLOGY

4.1 A Phase 1 Habitat Survey was undertaken at the Application Site on 3rd July 2020. During the site visit, the whole of the Application Site and accessible neighbouring land was examined in detail.

Survey	Date	Wind Speed	Wind Direction	Temperature		Rainfall	Cloud Cover
				Start	Finish		
Field	03/07/2020	15mph	SW	15°C	15°C	Light	100%

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

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

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

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

Species/Group	Indicative habitat	Field signs (in addition to sightings)
Bats	Roosts - Trees, buildings, bridges, caves etc. Foraging areas - e.g. Parkland, waterbodies, wetlands, woodland, hedgerows Commuting routes - Linear features (e.g. hedgerows, water courses, tree lines).	Potential roost sites: Droppings, urine splashes, staining and feeding remains.
Badger	Habitat mosaic in rural and many urban habitats	Excavations and tracks, sett entrances, latrines, hairs, well-worn paths, prints, scratch marks on trees
Otter	Rivers, streams, canals, ponds, lakes, ditches, drains and coastal areas.	Holts (or dens), prints, spraints, slide marks into watercourses and feeding signs.
Water Vole	Rivers, streams, canals, ponds, lakes, ditches, drains and marshes.	Burrow entrances, prints, distinctive latrine areas and feeding signs.
Birds	Habitat mosaic	Nests, droppings below nest sites (especially in buildings of trees); tree holes
Reptiles	Habitat mosaic	Sloughed skins
Great Crested Newt	Ponds within 500m of suitable habitat within the site boundary. Habitat Suitability Index (HSI assessment)	Egg wraps and animals (depending on time of year)

4.6 The field survey and report adhere to guidance from the following CIEEM documents:

- Guidelines for Preliminary Ecological Appraisal - Second Edition, December 2017.
- Guidelines for Ecological Impact Assessment in The UK And Ireland - Terrestrial, Freshwater, Coastal and Marine (September 2018).

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 initial field survey and desk top data gathered. As with any survey of this kind, it cannot be 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; in some instances, neighbouring land was studied from vantage points, maps within the public domain and aerial photography, it is possible that habitats important to the ecology of the Application Site may not have been recorded fully.

5.4 It is not always possible to identify every pond within 500m of an Application Site and whilst every effort was made to access all ponds, Wold Ecology do not guarantee that every pond within 500m have been included within this assessment.

5.5 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 DESKTOP STUDY

6.1 General description

6.1.1 The Application Site is located at East Newton, 2.3km south east of Aldbrough, in a rural location. The Application Site is approximately 1.2ha and is immediately surrounded by arable land, grazed pasture, mature private gardens and a caravan park.

6.1.2 Habitats within 2km surrounding the hamlet of East Newton is primarily low-lying agricultural land dominated by arable production with some grazed pasture. Woodland cover within 2km is limited and occurs as small shelterbelts and plantations adjacent to farms and small holdings. Whilst the Application Site is not connected to any ecologically valuable habitat, connectivity within 2km is provided by hedgerows, hedgerows with trees and ditches that drain the predominant arable land and link the site with the wider countryside. In addition, the North Sea coastline is 190m east of the Application Site.

6.1.3 A summary of the surrounding habitat is (radius of < 2km from the site):

- Buildings – farm buildings and residential properties
- North Sea coastline
- Hedgerow
- Mature trees and woodland
- Bail Wood
- Arable
- Mature private gardens
- Ponds and watercourses
- East Newton Drain
- Cess Dale Drain
- Bail Drain
- Grazed pasture

6.2 Desktop Study.

6.2.1 Natural England, the North & East Yorkshire Ecological Data Centre (NEYEDC), www.magic.gov.uk, social media, local authority planning portal and Wold Ecology employees, field surveyors and network of associate ecologists were consulted in order to obtain any ecological information that they hold of relevance to the Application Site and surrounding area.

6.2.2 The desk top 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) or equivalent
- Natural England Habitat Inventories
- Natural Character 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 International Designated Sites

6.2.3.1 The following International Designated Sites lie within 2 km of the Application Site (see figure 1):

Designation	*Name or location of site*	*Grid Reference*
Special Protection Area	Greater Wash	TA275385

6.2.3.2 The Greater Wash is described by Natural England as:

- Boundary of the SPA: The landward boundary of the SPA covers the coastline from Bridlington Bay in the north (at the village of Barmston), to the existing boundary of the Outer Thames Estuary SPA in the south. Along this stretch of coast, the boundary will come to Mean High Water (MHW). Across the mouth of the Humber Estuary, the boundary abuts the boundary of the Humber Estuary SPA, except where neither the little tern foraging zone or the red-throated diver Maximum Curvature Analysis (MCA) density threshold reaches the SPA. The landward boundary abuts the seaward boundary of The Wash SPA except where the former overlaps the latter to encompass the foraging area of Sandwich tern. The seaward boundary lies approximately 14 nautical miles (nm) from the shore at its furthest extent and is driven by the distribution of red-throated diver along the length of the SPA, with a small length off the north Norfolk Coast driven by the area used by foraging Sandwich tern. Size of SPA: The SPA covers an area of 353,578 ha or 3,536 km2.
- Site description: The Greater Wash SPA is located in the mid-southern North Sea between Bridlington Bay in the north and the Outer Thames Estuary SPA in the south. To the north, off the Holderness coast in Yorkshire, seabed habitats primarily comprise coarse sediments, with occasional areas of sand, mud and mixed sediments. Subtidal sandbanks occur at the mouth of the Humber Estuary, primarily comprising sand and coarse sediments. Offshore, soft sediments dominate, with extensive areas of subtidal sandbanks off The Wash as well as north and east Norfolk coasts. Closer inshore at The Wash and north Norfolk coast, sediments comprise a mosaic of sand, muddy sand, mixed sediments and coarse sediments, as well as occasional Annex I reefs. The area off the Suffolk coast continues the mosaic habitats mostly dominated by soft sediment.

- Qualifying species: The site qualifies under Article 4.1 of the Directive 2009/147/EC by regularly supporting populations of national importance of the Annex I species:

Species	Count (period)	% of subspecies or population	SPA selection guideline
Red-throated diver *Gavia stellata*	1,407 individuals (MoP 2002/03 - 2005/06)	8.3% GB non-breeding population	1.1
Little gull *Hydrocoloeus minutus*	1,255 individuals (MoP 2004/05 –2005/06)	No current GB population estimate	1.4
Sandwich tern *Sterna sandvicensis*	3,852 pairs (5 year MoP 2010-14)	35.0% of GB breeding population	1.1
Common tern *Sterna hirundo*	510 breeding pairs (5 year MoP 2010-2014)	5.1% of GB breeding	1.1
Little tern *Sternula albifrons*	798 pairs (5 year MoP 2009-2013)	42.0% of GB breeding population	1.1

- In addition, the site qualifies under **Article 4.2** of the Directive 2009/147/EC by regularly supporting a population of international importance of the migratory species:

Species	Count (period)	% of subspecies or population	SPA selection guideline
Common scoter *Melanitta nigra*	3,449 individuals (MoP 2002/03, - 2007/08)	0.6% biogeographic population [1]	1.4

Mean of Peak (MoP) for non-breeding populations, breeding populations taken from various sources and are summed across the relevant site-specific population estimates. GB populations derived from Musgrove *et al.* (2013)3 unless otherwise stated.

6.2.3.3 The International Designated Site is located 100m east of the Application Site.

6.2.4 Nationally Designated Sites

6.2.4.1 There are no Nationally Designated Sites within 2 km of the Application Site.

6.2.5 Locally Designated Sites

6.2.5.1 The following locally designated sites lie within 2 km of the Application Site (see figure 2):

6.2.5.1.1 East Yorkshire Local Wildlife Sites

Site Id	*Site Name*	*Grid Reference*	*LWS Status*
TA2535-01	Bail Wood	TA252366	Designated

6.2.5.2 The Internationally and Locally Designated Sites will not be impacted on due to the small-scale nature of the proposed development on existing developed land and the distance between the Application Site and the nearest SPA/LWS which is greater than 100 metres.

6.2.5.3 The bird species cited in the Greater Wash SPA will not be directly impacted upon by the proposed development and are not depended on the habitats recorded within the Application Site. The impact to the SPA and LWS is considered to be **neutral**.

6.2.6 Natural England Habitat Inventories

6.2.6.1 All the Natural England Priority Habitat inventories were searched, including the woodland inventory and grassland inventory. The following areas of notable habitat from the Habitat Inventories list were found within 2 km of the Application Site (see Figure 3).

Ancient Woodland Inventory
Version: *Ancient Woodlands* *July 2019*

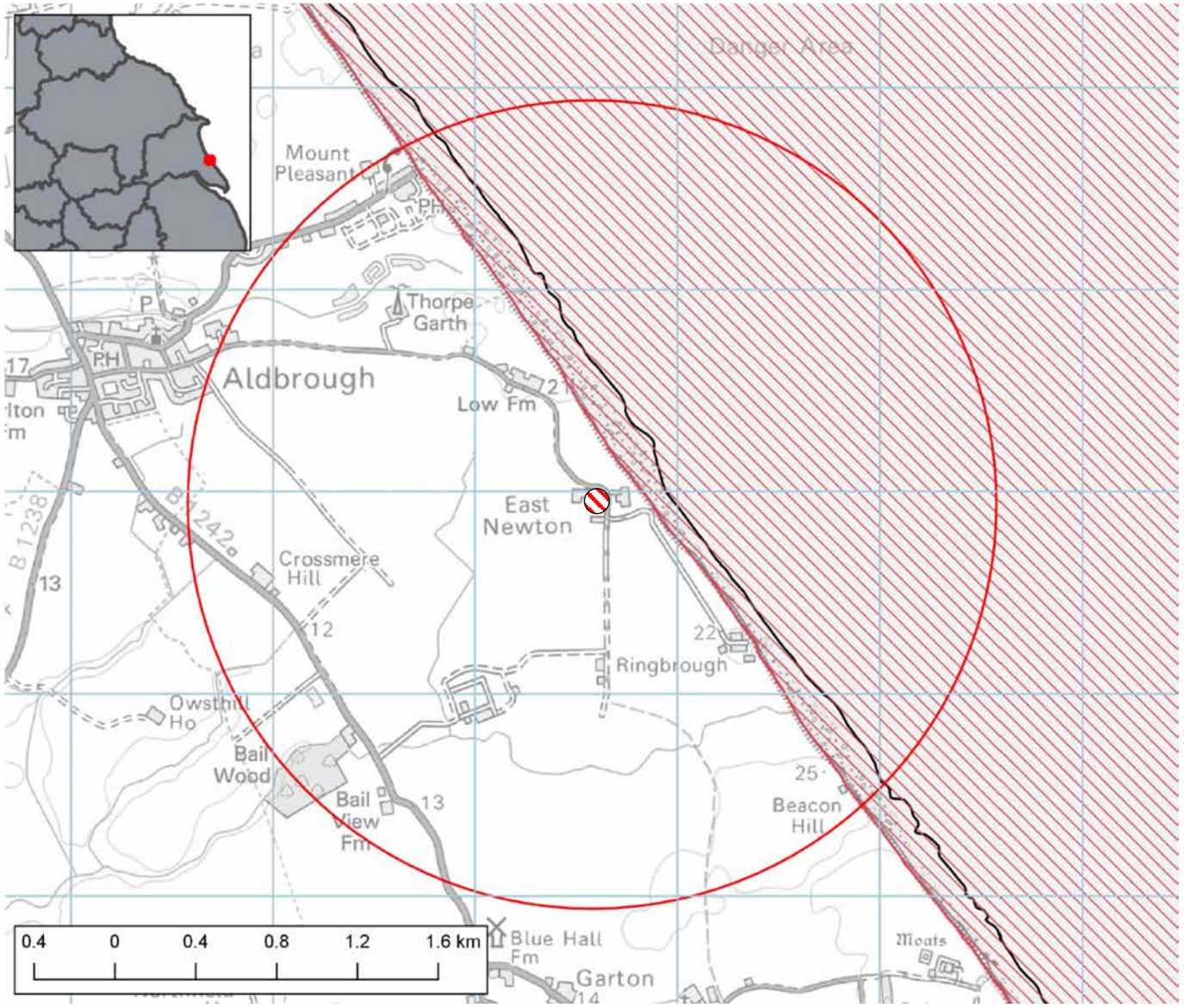
Habitat type	*Location or comments*
Ancient and Semi-Natural Woodland	Bail Wood
Planted Ancient Woodland Sites	None within the search area

Priority Habitat Inventory
Version: *Priority Habitats Inventory* *August 2017*

Habitat type	*Location or comments*
Deciduous woodland	Bail wood

6.2.6.2 The Natural England Priority Habitats will not be impacted on due to the small-scale nature of the proposed development existing developed land and the distance between the Application Site and the notable habitat which is greater than 100 metres, with no priority habitats within or immediately adjacent to the Application Site and consequently, the impact to notable habitats is considered to be **neutral**.

Figure 1.



NORTH

Scale: 1:25,000

Drawing title:
Internationally Designated Site Map

Legend

Search area

SPA

Application Site

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T: 01377 200242
E: info@woldecology.co.uk
W: www.woldecology.co.uk

Figure 2.

NORTH

Scale: 1:25,000

Drawing title:
Locally Designated Site Map

Legend

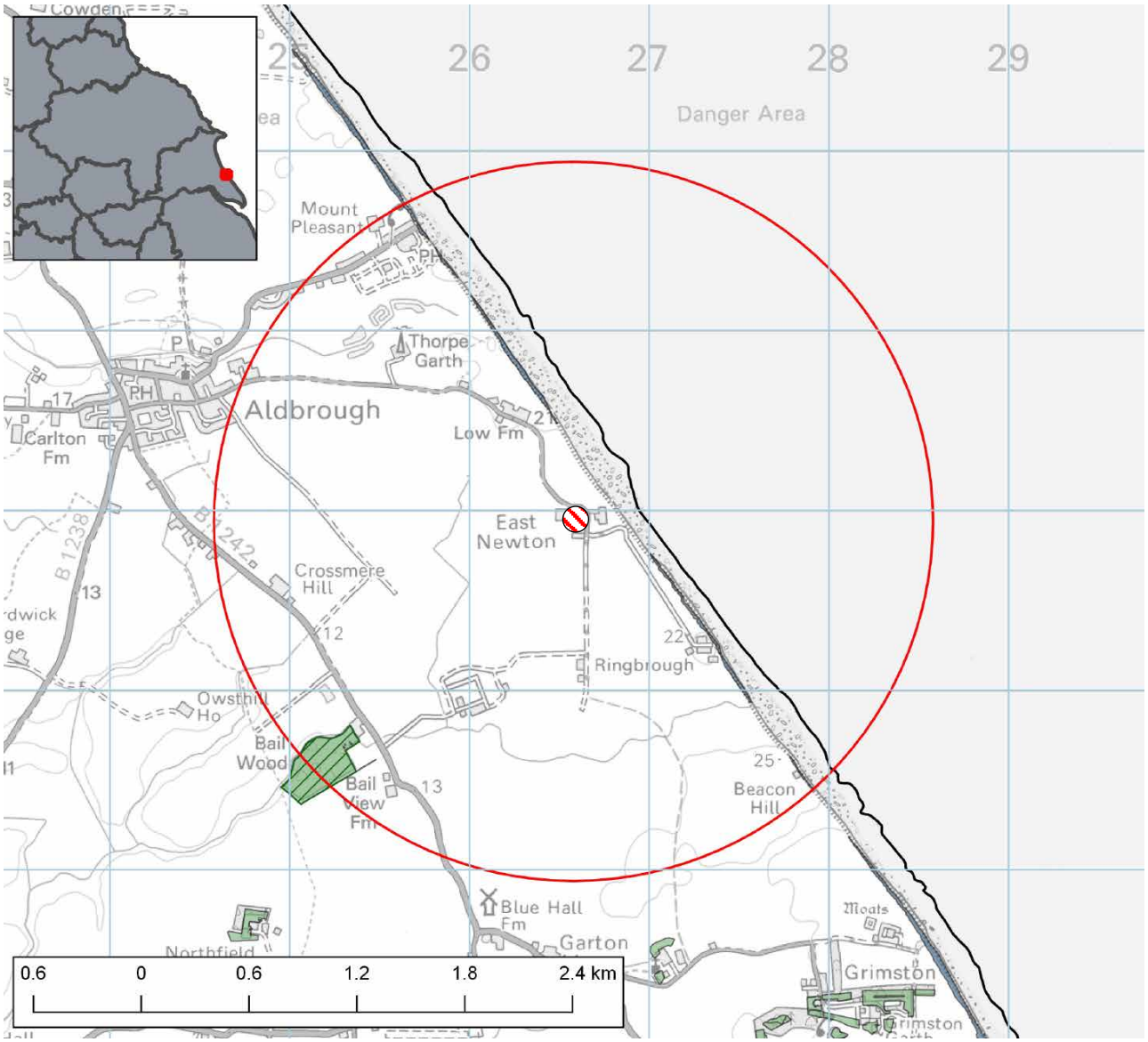
- Search area
- East Yorkshire LWS
- Application Site

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T: 01377 200242
E: info@woldecology.co.uk
W: www.woldecology.co.uk

Figure 3.



NORTH

Scale: 1:25,000

Drawing title:
Natural England Priority Habitats Map.

Legend

Search area

AWI

ASNW

PHI

Deciduous woodland

Maritime cliff and slope

Application Site

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T: 01377 200242
E: info@woldecology.co.uk
W: www.woldecology.co.uk

6.3 Natural Character Areas

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

6.3.2 NCA profiles are guidance documents which will help to achieve a more sustainable future for individuals and communities. The profiles include a description of the key ecosystem services provided in each character area and how these benefit people, wildlife, and the economy. They identify potential opportunities for positive environmental change and provide the best available information and evidence as a context for local decision making and action.

6.3.3 The Application Site lies within Natural Character Area 40 Holderness and is summarised below:

6.3.3.1 Holderness is a rural, low-lying, undulating plain with the broad, shallow valley of the River Hull flowing southwards through the centre towards Hull. The river eventually joins the expansive Humber Estuary where it becomes tidal, enclosed by flood banks, and drains into the North Sea.

6.3.3.2 The National Character Area (NCA) is bounded by the dip slope of the Yorkshire Wolds to the north and west, while eastwards, beyond the coastline of soft boulder clay cliffs, lies the North Sea. Rapid erosion of these cliffs is a conspicuous feature of this NCA, and forms part of an important coastal process of sediment transfer. Holderness is the single most important source of sediment in the southern North Sea: the sediment is carried south to the Humber, the Lincolnshire coast and the Wash, where it feeds beaches and through accretion helps intertidal habitats to adjust to rising sea levels.

6.3.3.3 Holderness shares an underlying chalk aquifer with the Yorkshire Wolds and is an important water resource for the area. The springs and streams flowing from the Wolds are part of the most northerly chalk streams in Britain, and they merge to form the River Hull in Holderness. The River Hull's headwaters are designated as a Site of Special Scientific Interest (SSSI) as a chalk stream and for marginal riparian habitats. Holderness has six SSSI which provide evidence of the glacial and postglacial history of the area. These consist of exposures in cliffs and gravel pits, and also include the remnants of bogs and meres. Hornsea Mere is a large, natural lake and is designated as an SSSI for its marginal habitats and as a Special Protection Area for populations of wintering wildfowl.

6.3.3.4 An extensive network of rivers, ditches, becks, dykes and canals drains the River Hull. The river's flood plain, of mainly base-rich loamy and clayey soils, is important for food production, with vegetables and root crops grown in the shallow valley and arable farming taking place on higher land in the west and the south-east, near the coast. The high-quality agricultural land comprises large field patterns bounded by drainage ditches on the River Hull flood plain, and there are hedgerows on

higher ground. Rare remnants of species-rich grassland occur around Hornsea and Lambwath meres, where low-lying, seasonally flooded hay fields are maintained by traditional farming practices.

6.3.3.5 Long views over the flat landscape and the relatively dispersed nature of settlement instil a sense of tranquillity, which is reinforced by sparse woodland cover and open views along the coastline. In contrast to this, there are some large caravan sites at certain points along the coast and the seaside resorts of Hornsea, Withernsea and Bridlington can be busy in the summer. Small, traditional villages are dispersed throughout the area, many of which have village greens, ponds and churches, some dating back to Norman times.

6.3.3.6 Key challenges in this area include groundwater management, coastal flooding and coastal management. Ensuring a sustainable approach to flood and coastal risk management and enabling the coast to continue to provide sediment to other areas will be important considerations for the future.

6.3.4 There are no relevant Statements of Environmental Opportunities that are relevant to the Application Site.

6.4 European Protected Species records (relevant to the Application Site)

6.4.1 Badger

- Badger *Meles meles* is recorded within the 2km radius surrounding the Application Site (source – NEYEDC 2020 and Wold Ecology network pers comm).

6.4.2 Bats

- Currently, there is no pre-existing information on bats at the site.
- There are records of brown long-eared bat *Plecotus auritus*, whiskered bat *Myotis mystacinus*, soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* within the surrounding 5km radius of the Application Site. (source – NEYEDC 2020 and Wold Ecology network pers comm). Wold Ecology bat records date from 2006 and include over 1000 bat activity surveys.
- There are no known Natural England development licenses relating to bats within 1km of the Application Site (source – www.magic.gov.uk).

6.4.3 Great crested newts

- There are no records of great crested newt for ponds located within 2km of the Application Site.
- There are no Natural England eDNA records within 2km of the Application Site (source - https://naturalengland-defra.opendata.arcgis.com/datasets/great-crested-newts-edna-pond-surveys-for-district-level-licensing-england
- There are no great crested newt Natural England development licenses within 1km of the Application Site (source – www.magic.gov.uk).
- The ponds within 250m of the Application Site were surveyed by Wold Ecology during spring 2012, the presence absence surveys did not identify the presence of great crested newts in ponds within 250m (source – Wold Ecology network pers comm).

6.4.4 Water vole

- There are no water vole *Arvicola amphibious* records within 2km of the Application Site (source – NEYEDC 2020).

6.4.5 Otter

- There are no otter *Lutra lutra* records within 2km of the Application Site (source – NEYEDC 2020).

6.4.6 Reptiles

- Grass snake *Natrix helvetica* are recorded within the surrounding 2km radius, with the closest records at Aldbrough 2km north west, with no records within 1km (source – NEYEDC 2020).

7.0 PHASE 1 FIELD SURVEY RESULTS

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

Phase 1 Habitat Classification	JNCC Reference Code
Broad-leaved plantation woodland	A1.1.2
Scattered trees (Broad-leaved)	A3.1
Semi improved neutral grassland/Tall Ruderal	B2.2/C3.1
Amenity grassland	J1.2
Ephemeral/short perennial/Bare Ground	J1.3/J4
Buildings	J3.6

7.2 Broad-leaved plantation Woodland

7.2.1 This habitat occurs as small belts around the periphery of the Application Site, particularly around the northern and south eastern boundaries. This habitat appears to have been planted, with a likelihood of being a wind break to offer some shelter from winds. The trees in this habitat have all been planted within the past 60 years, with the northern sections being closer to 30 years old and consequently this woodland is still relatively immature and of limited ecological value. These trees for a dense canopy and have been planted in close proximity to one another.

7.2.2 Species composition consists of white willow *Salix alba*, sycamore *Acer pseudoplatanus*, rowan *Sorbus aucuparia*, blackthorn *Prunus spinosa* and elder *Sambucus nigra*. The understorey is characterised by cow parsley *Anthriscus sylvestris*, common hogweed *Heracleum sphondylium*, stinging nettle *Urtica dioica* and red campion *Silene dioica*. No ancient woodland indicator species are associated with these plantations.

7.3 Scattered Trees (Broad-leaved)

7.3.1 A small number of scattered trees occur within the Application Site, away from plantations and predominantly around site boundaries, these comprise a mixture of planted and naturally regenerated deciduous species. Trees are below 60 years old and have a limited ecological value, several sycamores associated with the south west boundary have standing deadwood and appear to be in poor health, although do not provide opportunities for roosting bats.

7.3.2 Species diversity is poor and includes sycamore, whitebeam *Sorbus aria*, lime *Tilia* × *europaea*, plum *Prunus domestica*, poplar *Populus sp.* and hawthorn *Crataegus monogyna*. No specific basal communities were found growing in association with these trees.

7.4 Semi improved neutral grassland/Tall Ruderal

7.4.1 This habitat occurs in undisturbed areas within the eastern half of the Application Site. This includes small parcels of unmanaged grassland as well as areas around the edges of buildings. This habitat has arisen on eutrophic well drained soils with a former agricultural influence. The sward is dense and beginning to form tussocks and is regularly intermixed with stands of tall ruderal vegetation growth. Dominance of either habitat varies within the Application Site, but they generally occur as a mosaic together.

7.4.2 Species composition is dominated by stinging nettle, small nettle *Urtica urens*, creeping thistle *Cirsium arvense*, broad-leaved dock *Rumex obtusifolius*, curled dock *Rumex crispus*, white clover *Trifolium repens*, ribwort plantain *Plantago lanceolata*, Yorkshire fog *Holcus lanatus*, rosebay willowherb *Chamerion angustifolium*, great willowherb *Epilobium hirsutum*, white-dead nettle *Lamium album*, false oat grass *Arrhenatherum elatius*, common sorrel *Rumex acetosa*, bristly ox-tongue *Helminthotheca echioides*, dandelion *Taxacarum officinale*, common hogweed, common ragwort *Jacobaea vulgaris*, spear thistle *Cirsium vulgare*, cleavers *Galium aparine*, common mugwort *Artemisia vulgaris*, creeping bent *Agrostis stolonifera*, black mustard *Brassica nigra*, charlock *Sinapis arvensis*, field horsetail *Equisetum arvense*, bramble *Rubus fruticosus*, field bindweed *Convolvulus arvensis*, hemlock *Conium maculatum* and lesser burdock *Arctium minus*.

7.5 Amenity Grassland

7.5.1 The western half of the Application Site is dominated by amenity grassland which comprises short and lush grass that is cut regularly throughout the growing season, primarily by a tractor with a mower. The exact use of this grassland was unclear during the survey and it may be cut purely for aesthetic purposes. This grassland does not appear to be subjected to weed removal and applications of fertilisers and herbicides, although cuttings appear to be left in situ increasing soil nitrogen levels.

7.5.2 Species composition is relatively poor and is dominated by perennial ryegrass *Lolium perenne*, white clover, annual meadow grass *Poa annua*, creeping buttercup *Ranunculus repens*, dandelion, daisy *Bellis perennis* and lesser burdock. Species diversity tends to increase in marginal areas. All species are common and widespread in amenity grasslands with a reduced ecological value due to management and soil fertility.

7.6 Ephemeral/short perennial/Bare Ground

7.6.1 Bare ground habitats are frequent and diverse within the Application Site and primarily consist of the farmyard, building bases and roads. They comprise broken up concrete and bare soil substrate which have been colonised by an ephemeral/short perennial vegetation community through a lack of disturbance, especially in marginal areas.

7.6.2 Species consist of pineappleweed *Matricaria discoidea*, scentless mayweed *Tripleurospermum inodorum*, white clover, wall barley *Hordeum murinum*, great plantain *Plantago major*, fat hen *Chenopodium album*, groundsel *Senecio vulgaris*, American willowherb *Epilobium ciliatum*, dandelion, annual meadow grass, perennial ryegrass, germander speedwell *Veronica chamaedrys*, doves-foot cranesbill *Geranium molle*, cats-ear *Hypochaeris radicata*, common daisy, red-dead nettle *Lamium purpureum*, wavy bittercress *Cardamine flexuosa* and sun-spurge *Euphorbia helioscopia*.

7.7 Buildings

7.7.1 The following buildings are present within the Application Site:

a. ***Barn 1*** – the barn is currently used for storage and comprises breeze block and timber panel walls cement fibreboard gables. The twin pitched roof is covered with cement fibre boards and is supported by a concrete frame.
b. ***Barn 2*** – the barn is currently unused and comprises cement fibreboard sheeting and breezeblock walls. The pitched roof is covered with cement fibre boards and is supported by a steel frame.

c. ***Barn 3*** – the barn is currently used for storage and comprises red brick walls and a pitched roof covered with pan tiles. The roof is supported by smooth sawn timbers and is partially lined with a bitumen felt.

7.8 The following species were recorded during the field survey:

- Blackbird *Turdus merula*
- Robin *Erithacus rubecula*
- Wren *Troglodytes troglodytes*
- Whitethroat *Sylvia communis*
- Great tit *Parus major*
- Blue tit *Cyanistes caeruleus*
- Starling *Sturnus vulgaris*
- House sparrow *Passer domesticus*
- Chaffinch *Fringilla coelebs*
- Goldfinch *Carduelis carduelis*
- Swallow *Hirundo rustica*
- Woodpigeon *Columba palumbus*
- Skylark *Alauda arvensis*
- Dunnock *Prunella modularis*
- Carrion crow *Corvus corone*
- Rabbit *Oryctolagus cuniculus*
- Field vole *Microtus agrestis*
- Brown rat *Rattus norvegicus*

8.0 SPECIES APPRAISAL

8.1 The habitats within and surrounding the Application Site is potentially important, and the development area may impact upon mobile species. Consequently, the extended phase 1 survey and preliminary ecological appraisal targeted the following species relevant to the Application Site and proposed development:

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

8.2 Bats

8.2.1 Legislation

8.2.1.1 All bats and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and are further protected under the Conservation of Habitats and Species Regulations 2017 (as amended).

8.2.1.2 The Conservation of Habitats and Species Regulations 2017 (as amended), provision 41 states an offence is committed if a person:

(a) Deliberately captures, injures, or kills any wild animal of a European protected species (i.e. bats),
(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.

8.2.1.3 Section 9 of the Wildlife and Countryside Act (1981) states:

- It is an offence for anyone without a licence to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally. It is also illegal for anyone without a licence to intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

8.2.1.4 Bat roosts are protected throughout the year, whether or not bats are occupying a roost site.

8.2.2 Field Survey Methodology

8.2.2.1 The daytime assessment identified whether the trees and buildings had any signs of occupancy and/or bat usage. This took the form of a methodical search, both internally and externally, for actual roosting bats and their signs. Specifically, the visual survey involved the following:

8.2.2.2 Trees

a. Assessment and evaluation of the trees and their potential to support bats;
b. Tree hazard assessment including tree characteristics, health, site conditions, and defects in relation to a trees potential to support bats. Features that might indicate the presence of bats are as follows:
    - Trees that contained a cavity or space of at least 10mm

- Woodpecker holes, rot holes, cavities, loose bark and ivy, examples of known roost sites
- Tree diameter at chest height of > 20cm (less indicates that bats are less likely to be present)
- Trees < 80 years of age are less likely to be attractive to bats
- Droppings, scratch marks and staining on beams, cavities and under bark.

b. Assessment of crevices and cracks to assess their importance for roosting bats.

c. The duration of the daytime, visual inspection was 45 minutes

8.2.2.3 Remove if no buildings present on site – Buildings

- Assessment for droppings on walls, windowsills and in roof spaces
- Scratch marks and staining on beams, other internal structures and potential entrance and exit holes
- Wing fragments of butterfly and moth species underneath beams and other internal structures
- The presence of dense spider webs at a potential roost can often indicate absence of bats
- Assessment of crevices and cracks in the buildings to assess their importance for roosting bats

8.2.3 Field Survey Results

8.2.3.1 Following the visual inspection, an assessment was made of the buildings and trees suitability to support roosting bats.

8.2.3.2 **Barn 1** - the following roosting opportunities were present within the fabric of the barn:

- Gaps in the block work where mortar had been displaced.
- Gaps in the internal concrete barn supports.
- Gaps between concrete barn supports and corrugated fibre board roofing and walls.
- Access into the building is provided by open doors and windows.
- No evidence of bats was observed.
- The building has been assessed as having a LOW SUITABILITY to support bats.

8.2.3.3 **Barn 2** - the following roosting opportunities were present within the fabric of the barn:

- Gaps in the block work where mortar had been displaced.
- Gaps behind fibre board end panels.
- No evidence of bats was observed.
- The building has been assessed as having a LOW SUITABILITY to support bats.

8.2.3.4 **Barn 3** - the following roosting opportunities were present within the fabric of the Barn:

- Gaps beneath the ridge tiles where mortar has been displaced.
- There are no missing ridge tiles.

- Loose fitting pan tiles with gaps beneath.
- Missing/slipped pan tiles.
- Gaps in missing mortar below gable tiles.
- Gaps above the eaves.
- Missing mortar in the brick work.
- Subsidence cracks.
- Gaps adjacent to timber doors and timber windows.
- Gaps adjacent to timber lintels.
- Gaps above the internal wall plates.
- Gaps above the ridge beam.
- Gaps between felt and pan tiles above.
- Gaps in the internal brick work.
- Gaps in the roof structure and mortice joints.
- Access into the building is provided by open doors and windows.
- No evidence of bats was observed.
- The following evidence of bats was observed:
    - 6 bat droppings were observed on the first floor of barn 2. The location of the bat droppings suggests a roost located in an internal gap in the partition wall.
- The building has been assessed as having a HIGH SUITABILITY to support bats.

8.2.3.4 No potential roost sites exist within the studied trees on site, predominantly due to a lack of suitable roosting cavities within the trees, immature age and form.

8.2.4 **Site Status Assessment**

8.2.4.1 Based on an activity survey conducted during July 2020, it has been determined that the studied buildings at Grange Farm contain the following bat roosts (see 9.3):

Structure/ reference	Species	Count/ estimate	Roost location	Site status assessment	Conservation significance of roost	Use and importance of the site throughout the year
Barn 2 **Roost 1**	Common pipistrelle	2	Gap in the internal brick work	Day roost	LOW	No evidence to suggest a maternity roost or significant numbers of bats. Summer use.
Barn 2 **Roost 2**	Common pipistrelle	2	Gap in the internal brick work	Day roost	LOW	

8.2.4.2 No signs of roosting bats or bat roosts were recorded in barn 1 and 2.

8.2.3.3 The wider area supports several woodland habitats, mature gardens and grasslands which offer alternate foraging and commuting habitat for bats. The Application Site habitats are not extensive and are similar to surrounding agriculturally dominated landscapes and consequently, the Application Site is not considered integral to the favourable population status of local bat populations. The Application Site is exposed and heavily farmed, consequently, the Application Site is sub optimum for foraging and commuting bats and is not considered integral to the favourable conservation status of local bat populations.

8.2.4 Biodiversity Gains and Recommendations

8.2.4.1 Refer to the Grange Farm Bat survey Report (2020) for the impact assessment and mitigation.

8.3 Great crested newt.

8.3.1 Legislation

8.3.1.1 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 Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and is further protected under the Conservation of Habitats and Species Regulations 2017 (as amended). 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.

8.3.1.2 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).

8.3.1.3 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.

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

8.3.2 Field Survey Methodology

8.3.2.1 A habitat assessment was completed on the proposed development area and surrounding land (500 metres radius) accessible at the time of the survey. The assessment combined Great Crested Newt Mitigation Guidelines (English Nature 2001) and Evaluating the Suitability of Habitat for the Great Crested Newt (R. S. Oldham, J. Keeble, M. J. S. Swan and M. Jeffcote, undated) methodology.

8.3.2.2 The entire Application Site was assessed for its potential to support great crested newts, whilst conducting the 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 ponds within the locality and potentially, great crested newt populations.

8.3.2.3 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.

8.3.3 Field Survey Results

8.3.3.1 No records of great crested newt occur within 2km of the Application Site. The closest known populations are in excess of 2km and are fragmented by expanses of drained arable land and road networks.

8.3.3.2 There are 3 ponds within 250m of the Application Site. Ponds 1 and 2 are now dry or in have very limited amounts of water in the case on pond 1. These fail to hold sufficient water levels throughout the year to support viable great crested newt populations and the vegetation structure suggests an absence of water over a longer period. Pond 2 appears to have been dry for a long time (>10 years).

8.3.3.3 Pond 3 is located within the adjacent caravan site and the pond contained good numbers of fish. Fishponds are typically sub-optimum great crested newt habitat and have reduced potential for great crested newt; they are not considered to be of any significance to the species. Key attributes to the decreased probability of great crested newts being present within fishponds are:

- High density of stocked fish, which predate great crested newt larvae, eggs, and adults. The London Essex and Hertfordshire Amphibian and Reptile Trust state that 'Despite the natural protection of a poisonous secretion which makes the adults unpalatable to most predators, the larvae are highly vulnerable to fish predation. Entire colonies can be impacted upon by the introduction of fish'. It is unlikely that fishponds support great crested newts.
- Sticklebacks were noted within the pond. Sticklebacks are voracious predators of great crested newt larvae (Frazer 1989, & Jehle et al 2011), which influences breeding site selection and distribution (Cooke & Frazer 1976, & Jehle et al 2011).
- Decrease macrophyte growth due to fish disturbance and foraging and decreased water turbidity.
- Increased water turbidity due to fish disturbance and associate high nitrate input.
- Fish likely to predate large numbers of the invertebrates important for great crested newt reproduction and adult diet.
- Isolated nature resulting in failure to form meta-populations and limits genetic diversity, further limiting breeding recruitment.

8.3.3.4 No ponds or permanent water bodies suitable for breeding great crested newts were observed within the Application Site, the field survey and analysis of maps suggests that the nearest suitable pond is located over 500m from the Application Site.

8.3.3.5 Whilst great crested newts are known to move considerable distances from their breeding ponds, the vast majority of great crested newt will remain much closer to their breeding ponds (NE 2001). The quality of terrestrial habitat near to a known breeding pond is an important factor in determining how far they will disperse. Where good quality terrestrial habitat is found close to the breeding ponds, great crested newts are unlikely to travel large distances, whereas poor quality habitat close to the ponds may force them to travel greater distance to find suitable terrestrial foraging habitat.

8.3.3.4 This analysis is to a large degree supported by the conclusions of English Nature (EN) Research Note 576 (2004), an assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt *Triturus cristatus,* which notes that:
"The most comprehensive mitigation, in relation to avoiding disturbance, killing or injury is appropriate within 50m of a breeding pond. It will also almost always be necessary to actively capture newts 50-100m away. However, at distances greater than 100m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality. At distances greater than 200-250m, capture operations will hardly ever be appropriate."
And,
"The least favoured direction of terrestrial dispersal has been found to be towards the habitat least likely to provide favourable conditions: arable land and open areas."

8.3.3.5 These recommendations are also broadly consistent with findings in the literature, since although a maximum routine migratory range has been estimated as approximately 250 m from a breeding pond (Franklin, 19935; Oldham and Nicholson, 19866; Jehle, 20007), Jehle (2000) determined a terrestrial zone of 63 m, within which 95% of summer refuges were located. In addition, following the breeding season, (Jehle and Arntzen, 2000) recorded 64% of newts within 20 m of the pond edge. More recent research (Kovar *et al* 20098) also found great crested newts at the farthest, 249m from the water.

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

- There is no current knowledge of great crested newts within the Application Site.
- No suitable ponds exist within the Application Site.
- The Application Site primarily comprises bare ground, short grassland and buildings which inhibits dispersal by reducing areas of shelter, foraging grounds and leaving amphibians open to predation and desiccation. Consequently, Application Site is poor quality terrestrial habitat for amphibians.
- The open exposed nature of the site with its limited plant diversity and improved grass with limited refugia results in a poor invertebrate habitat. Great crested newts predominantly prey on slugs, insects, spiders and earthworms. They tend to forage in woodland, scrub, rough grassland and wetland areas largely due to the large diversity and abundance of invertebrates which these areas attract.
- Currently, the Application Site consists of a small amount of optimum terrestrial great crested newt habitat. This is essentially an "island" within a

wider area of drained agricultural land and hard standing dominated by sub-optimum habitat

- The surrounding arable landscape significantly hampers great crested newt dispersal into the area, without the aid of humans. Great crested newts tend not to occur within areas of arable land unless it is directly adjoined to a breeding pond, unlike in the Application Site. Arable land is open, well drained with limited refugia leading to a significant risk of predation. The use of pesticides, lack of vegetation diversity and lack of refuge leads to poor invertebrate habitat and therefore poor foraging habitat.
- No records of great crested newt exist within 2km of the Application Site.

8.3.4 **Wold Ecology does not recommend any further surveys for great crested newts.**

8.3.5 However, it is recommended that an amphibian method statement should be implemented, due to the close proximity of a large fishpond (Pond 3). It is considered that such a pond could support large numbers of common toads *Bufo bufo*. Common toads' favour large pond particularly where they contain fish, in similar ponds populations may be very high.

8.3.6 Amphibian Method Statement

8.3.6.1 This method statement (MS) has been designed to ensure the avoidance of disturbance, killing or injuring amphibians by taking all reasonable steps to ensure works do not impact upon amphibians. This Method Statement will ensure that:

- Reasonable steps are taken to ensure that the risk of amphibians being killed or injured is minimal.
- Amphibians are not to be significantly disturbed by the works.

8.3.6.2 Summary of method statement:

- Hand search.
- Tool box talk, and safe working practices employed.
- Safe working practices

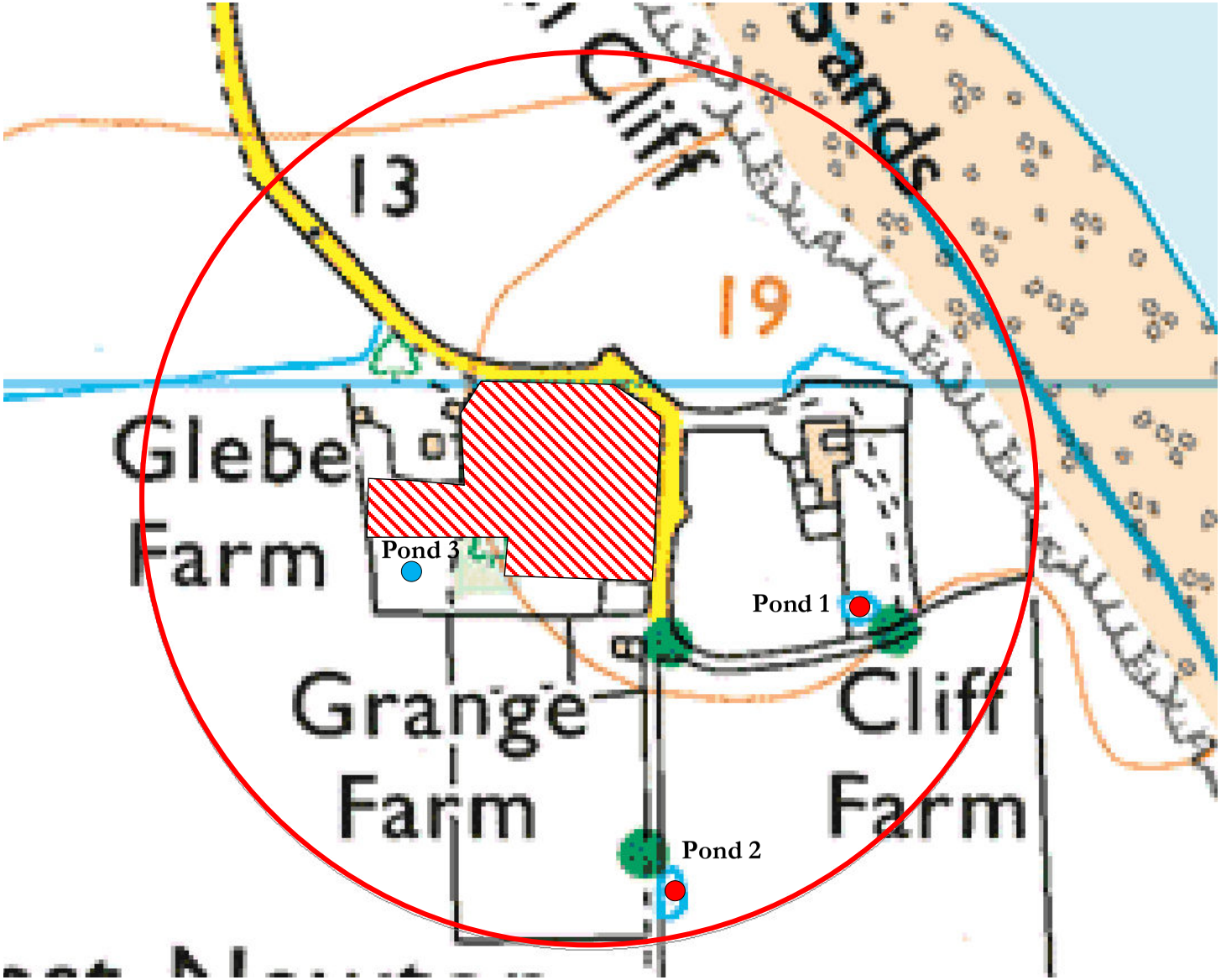
8.3.6.3 A hand search will be undertaken each morning prior to the start of any ground works.

- A suitably qualified, experienced, and licensed ecologist shall be appointed to act as an ecological clerk of works (ECoW) to supervise all work associated with site clearance and to ensure that the recommendations in this method statement are implemented correctly.
- During the active growing period, the vegetation within the construction zone will receive a careful application of an approved herbicide. This is in order to reduce shelter and cover; thus, making the construction zone poor quality for amphibians by reducing areas of shelter, foraging grounds, and leaving amphibians open to predation and desiccation.
- Cutting vegetation by hand, strimming, or mowing of vegetation may be acceptable as a technique to encourage amphibians to move out of habitats. However, there is little evidence to show that this is very effective. Vegetation cutting is acceptable so long as amphibians are not endangered; generally, there is reduced likelihood of encountering amphibians exposed and above ground during the day, but it is recommended that to minimise chances of killing amphibians where vegetation is dense, cutting should be carried out

during periods of hot, dry weather and to leave a sward height of around 15cm.

- Prior to machinery entering the site, the access route and any optimum areas of terrestrial amphibian habitat (log piles, rubble etc.) will be hand searched by the ECoW to look for any resting amphibians.
- Once the areas have been hand searched and after confirmation by the ECoW that no amphibians are present the machinery can enter site and begin site clearance.
- Excavated materials—these will not be tipped onto areas of potential value to amphibians. Tipping areas are to be approved and searched by the ECoW prior to being used.
- No destructive works can be completed if the overnight air temperature is below 5^0C prior to the works commencing. The ECoW will advise on whether the prevailing weather conditions are suitable for the works proposed to be completed.
- The contractors and those involved with building works should take care not to provide temporary refugia for amphibians. Temporary refugia include stacking of sundries in plastic bags, leaving piles of rubble and the use of tarpaulins/plastic sheets. These all should be stacked on pallets (Off-Ground).
- Any trenches or deep pits within the development site should be infilled on the same day, securely covered up or provide a means of escape should amphibians enter. A means of escape could include a roughened plank of wood or similar, placed in the trench as a ramp to the surface. This is particularly important if the trench/pit is liable to fill with water.
- Any trenches/pits will be inspected each morning to ensure no amphibians have become trapped overnight.
- Amphibians that are encountered should be released into adjacent well vegetated habitats where they are not open to predation. Amphibians should not be put into ponds.
- Open pipework left overnight should be blanked off at the end of each working day.

Figure 4.



NORTH

Not to Scale

Drawing title:
Pond map.

KEY

	Pond accessed
	Pond no longer present
	250m radius
	Application Site

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T: 01377 200242
E: info@woldecology.co.uk
W: www.woldecology.co.uk

8.4 Birds

8.4.1 Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British 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, 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.

8.4.2 Schedule 1 Birds

8.4.2.1 Schedule 1 birds are rare or scarce species afforded the same protection as above (8.4.1.1), but also have additional protection under Part 1 of the Wildlife and Countryside Act 1981 (as amended). This further protection protects these species from being intentionally or recklessly disturbed whilst nesting, either at or close to the nest site.

8.4.1.3 Planning consent for a development does not provide a defence against prosecution under this act.

8.4.2 Field Survey Methodology

8.4.2.1 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.

8.4.2.2 The 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*.

8.4.2.3 Wold Ecology assessed the site for schedule 1 listed species recorded having bred or attempted to breed in Yorkshire (Wold Ecology, NEYEDC), 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.

8.4.3 Field Survey Results

8.4.3.1 Schedule 1 Listed Birds

8.4.3.1.1 Summary of the Application Site's suitability to support schedule 1 birds:

Species recorded within 2km	Suitability of Application Site
Barn Owl *Tyto alba*	Evidence of barns owl was observed within barn 3, with a roost site noted. No evidence of breeding was observed. Limited amounts of foraging habitat will be lost, which on a local landscape scale is considered to be negligible given the amount in the wider area.

8.4.3.2 None-schedule 1 birds - breeding birds

8.4.3.2.1 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 relevance to this project are small passerine species, particularly those associated with the trees, buildings and tall/dense vegetation.

8.4.3.3 None-schedule 1 birds - wintering birds

8.4.3.3.1 The Application Site is not considered to be valuable to wintering birds like wildfowl and waders. The Application Site is too enclosed, with high trees and buildings and is bounded by caravan sites and farmyards causing regular disturbance, reducing the value of the habitat for these species' groups. The only impact typically of any relevance to wintering birds are those associated with the temporary loss of food sources. This is principally associated with the loss of sections of trees 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.

8.4.4 **Wold Ecology does not recommend any further surveys for birds.**

8.4.5 Biodiversity Gains and Recommendations

8.4.5.1 It is concluded that the Application Site is a suitable habitat for agricultural bird species with various designations. There is nesting potential for a range of birds such as thrushes, finches, warblers, woodpigeon *Columba palumbus*, magpie *Pica pica*, dunnock *Prunella modularis* and wren *Troglodytes troglodytes*. Several simple management prescriptions can improve the site for breeding bird species.

8.4.5.2 Any buildings, trees and tall vegetation to be removed should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between mid-September and early February inclusive) or be carefully checked***** by an ecologist to confirm no active nests are present - prior to removal during the summer period. If nesting birds are found during the watching brief, works will need to stop until the young have fledged. Since a number of nests are active, work will need to wait until fledging has occurred, then trees should be removed immediately to avoid other nests being created.

***** Thick and overgrown hedgerows are often difficult to inspect fully and removal of a hedge during the spring/summer period is not recommended.

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

Name	Description	Quantity
Schwegler Sparrow Terrace 1SP	Sparrow terrace	4

8.4.5.4 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.

8.4.5.5 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.

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

8.4.6 Barn Owl

8.4.6.1 The British race of barn owl, for which Scotland is the northern limit, has a European distribution that includes countries adjoining the Mediterranean basin. In 1987 the British barn owl population was estimated at 5,000 pairs, a reduction from 12,000 pairs in 1934. Since the 1930's the barn owl has undergone a significant decline in numbers. Despite continued decline, the barn owl is still widespread in lowland agricultural habitats.

8.4.6.2 **Immediately prior to development works taking place an inspection by a qualified barn owl surveyor should be made to ensure the status of barn owls has not changed since the initial survey.**

8.4.6.3 **To enable continuity of the roost site, a nest box should be erected on site (within c.200 metres of the barn 3) at least 30 days before disturbance works begins. This alternative provision must remain available to the birds until at least 30 days after permanent provision has been made within the development.**

8.4.6.4 **To enable permanence, it is recommended that a new permanent nesting/roosting place is provided inside one of the developed buildings**. The aim of this provision is to ensure that a suitable roost/nest site remains available long beyond after the development has taken place. Recommendations within Barn Owls and Rural Planning Applications A guide for Planners should be followed.

8.4.6.5 Permanent nest boxes should be carefully located away from any bat mitigation on site.

8.4.6.6 Wold Ecology recommends boxes made by Green Future Building (GFB):

- The tried and tested GFB 'Ecology Design' Barn Owl boxes are made using extreme fibreboard, which has a manufacturer's material guarantee of 50 years. Pinned, glued and screwed using stainless steel screws, GFB provides a guarantee of 15 years for these boxes. Access via a door at the front is provided in order for cleaning, ringing and research purposes. The front shelf allows an area for both mature and young owls to land and stand without the risk of baby owls falling out of the box. GFB believe these next generation boxes are the best on the market and our original design has been tried and tested through extensive use in the Yorkshire Wolds.
- The new Barn Owl box has been redesigned incorporating a new fibreboard material and finish guaranteed to repel all weathers and guaranteed to increase long term durability.

- All GFB boxes are constructed to a high standard and can be offered either as fully built-up units or in the increasingly popular flat-pack form. On the fully assembled boxes, panels are completely removable to help with positioning and fixing of boxes when working at heights. Self-assembly of our flat-packed box is easy as the five sections screw together neatly, requiring only a screw driver or power driver.
- Contact details for GFB are available at http://greenfuturebuilding.org.uk/

8.5 Badgers

8.5.1 Legislation

8.5.1.1 Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to wilfully kill, injure or take badgers or to interfere with a badger sett, obstructing access to or any entrance of a sett, causing a dog to enter a sett, disturbing a badger when it is occupying a sett, to dig for a badger, to cruelly ill-treat a badger or to possess or control a live badger. Interference with a badger sett is an offence under Section 3 of the Act. This includes recklessly damaging or obstructing a sett whilst clearing land for development.

8.5.1.2 Due to the sensitive nature of publishing badger information in the public domain, details of the badger survey within this report is restricted.

8.5.2 Field Survey Methodology

8.5.2.1 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.

8.5.2.2 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, dung pits and foraging activity
- Badger prints, hairs and paths
- Evidence of badger

8.5.3 Field Survey Results.

8.5.3.1 No main setts, annexe setts, subsidiary setts or outlier setts were located within 50 metres of the Application Site 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. Suitable habitat outside of the Application Site was also extensively searched where accessible.

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

8.6 Reptiles

8.6.1 Legislation

8.6.1.1 The legislation relating to the protection of the more common reptiles (adder *Vipera berus*, grass snake *Natrix helvetica*, common lizard *Zootoca vivipara* and slowworm *Anguis fragilis*) in Britain is contained mainly within the Wildlife and Countryside Act (1981) as amended by the Countryside and Rights of Way Act (2000). Their inclusion on Schedule 5 gives 'partial protection' (i.e. only parts of section 9 apply). Under the Act it is an offence to;

- Intentionally (or recklessly) kill or injure commoner reptile species.

8.6.1.2 The less common reptile species such as sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* have a higher level of protection under the Wildlife and Countryside Act (1981). However, these species will not be present within the Application Site, owing to their restricted southerly British distribution and the lack of suitable habitat.

8.6.1.3 Since its original enactment, the Wildlife and Countryside Act has been subject to many changes (notably via Schedule 12 of the Countryside and Rights of Way Act 2000) and is further protected under the Conservation of Habitats and Species Regulations 2017 (as amended). These have in particular affected penalties and enforcement. Offences under section 9 of the Act are now 'arrestable'. Enforcement is usually by the Police and less frequently by Natural England. However, section 25(2) of Wildlife and Countryside Act also states that a local authority may institute proceedings. Prosecutions can result in a level five fine (currently £5000) for each offence (and the Act is specific that killing/injuring of each individual animal can constitute a separate offence), the forfeiture of any equipment, etc., used to perpetrate that offence and (under the Countryside and Rights of Way Act 2000) up to six months imprisonment.

8.6.2 Field Survey Methodology

8.6.2.1 No direct observations or field signs of reptiles was recorded on site. A full walkover was undertaken to assess the sites potential to support reptiles.

8.6.3 Field Survey Results

8.6.3.1 The desktop study identified grass snake as the only reptile species which is found within the wider area. Reptiles are moderately localised in East Yorkshire.

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

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

- Reptiles use cracks, crevices, and small mammal burrows to access underground refugia and hibernacula. These habitat features are limited within the Application Site, reducing the value to reptiles.
- 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.

8.6.4 **Wold Ecology does not recommend any further surveys for reptiles.**

8.7 Hedgehog

8.7.1 Legislation

8.7.1.1 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.

8.7.2 Field Survey Methodology

8.7.2.1 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.

8.7.2.2 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.

8.7.2.3 The following field signs will indicate the presence of hedgehogs:
- Nests within dense vegetation
- Hedgehog droppings and prints
- Road causalities.

8.7.3 Field Survey Results.

8.7.3.1 No active or unused hedgehog nests were found within the Application Site. Most of the Application Site is too open to support nesting behaviour, although the plantation bases and dense vegetation stands offer suitable habitat.

8.7.4 Biodiversity Gains and Recommendations

8.7.4.1 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.

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

8.7.4.3 Encouraging thick hedgerow bases and areas of rough grassland will offer good hedgehog habitat within the study area. Hedgehogs favour lawned grassland in close proximity to rough grassland for foraging where they can access soil invertebrates on evenings.

8.7.4.4 A number of hedgehog houses should be positioned around the site within hedge bases, dense bramble and rough grassland – where applicable. These will provide important breeding and hibernation sites for hedgehogs within the local area. Boxes should be sited out of direct sunlight with the entrance facing away from prevailing winds, in or under thick vegetation. The boxes should be situated away from busy roads or areas of high disturbance.

9.0 HABITATS APPRAISAL

9.1 Biodiversity Action Plans (BAP) Habitats of Principal Importance for the Conservation of Biological Diversity

9.1.1 In 1995, 'Biodiversity: The UK Steering Group Report' was published, which aimed to conserve and enhance biological diversity within the UK, including action plans for 38 key habitats and for 402 of our most threatened species. These plans describe the status of each habitat and species, outline the threats they face, set targets and objectives for their management, and propose actions necessary to achieve recovery. The Biodiversity Action Plans (BAP) have recently been updated, new ones added, and others removed, so there are numerous habitats that have been listed as priorities for conservation action. A list of these UK BAP species and habitats can be found at http://jncc.defra.gov.uk/page-5706

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

9.1.3 In summary, none of the following UKBAP Habitats (which meet the UKBAP Habitat criterion) were recorded on site:

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

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

9.2 Trees

9.2.1 Any trees to be retained 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 tree's 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.

10.0 BIBLIOGRAPHY

Andrews, H., *et al*, (2013). *Bat Tree Habitat Key*. AEcol, Bridgewater.

Arntzen, J.W. & Teunis, S.F.M (1993). *A six-year study on the population dynamics of the crested newt (Triturus cristatus) following the colonisation of a newly created pond.* Herpetological Journal 3: 99-110.

Baker, J., Beebee, T., Buckley, J., Gent, T. and Orchard, D. (2011). *Amphibian Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

Beebee. T., & Griffiths. R., (2000), *Amphibians and Reptiles*, Harper Collins.

Chinery, M., (2007), *Insects of Britain and Western Europe*, A & C Black.

Chinery, M., (2011), *Britain's Plant Galls*, Wild Guides.

Cramp, S. and Simmons, K.E.L., (1980), *The Handbook of the Birds of Europe the Middle East and North Africa, The Birds of the Western Palaearctic.* (eds.), 1, 2, 3, 4, 5, 6, 7, 8, 9, Oxford University Press.

Dietz, C., Helversen, O.V., & Nill, D., (2009), *Bats of Britain, Europe & Northwest Africa*. A & C Black.

Entwhistle, A.C., Harris, S., Hutson, A.M., Racey, P.A., Walsh, A., (2001). *Habitat Management for Bats - A guide for land managers, land owners and their advisors*. JNCC.

Ferguson-Lees, J., Castell, R., & Leech, D., (2011) *A Field Guide to Monitoring Nests*, BTO.

Gent, T., & Gibson, S., (2003), *Herpetofauna Workers' Manual*. Pelagic publishing.

Gilbert G., Gibbons D.W. & Evans J. (1998) B*ird Monitoring Methods: A manual of techniques for key species*, RSPB, Sandy.

Gregory R., D., Wilkinson N., I., Noble D., G., Robinson J., A., Brown A., F., Hughes J., Procter D., A, Gibbons D., W. and Galbraith C., A., (2002), *The population status of birds in the United Kingdom, Channel Islands and Isle of Man: an analysis of conservation concern 2002–2007*. British Birds 95: 410–450.

Greenhalgh, M., & Ovenden, D., (2007), *Freshwater Life; Britain and Northern Europe*. Harper Collins.

Habitats Directive. (1994) European Commission.

Harris, S., & Yalden, D.W., (2008), *Mammals of the British Isles, Handbook, 4th Edition*. The Mammal Society.

Jehle, R., Thiesmeier, B., & Foster, J., (2011), *The Crested Newt a dwindling pond-dweller*, Laurenti-Verlag (Germany).

JNCC, (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*.

Johnson, O., & More, D., (2004), *Collins Tree Guide*, Harper Collins.

Langton, T, Beckett, C, & Foster, J, (2001), *Great Crested Newt Conservation Handbook*. Froglife.

Lever, C., (2009), *The Naturalized Animals of Britain and Ireland*, New Holland Publishers (UK) Ltd.

Macdonald, D., & Barrett, P., (1993), *Mammals; Britain and Europe*, Harper Collins.

Mitchell-Jones A.J. (2004). *Bat Mitigation Guidelines*, English Nature, Peterborough.

Mather, J., (1986). *The Birds of Yorkshire*. Christopher Helm Publishers Ltd.

Natural Area Profile. English Nature, 1997.

Protection of Badgers Act. 1992.

Roper, T.J., *Badger*, New Naturalist, Harper Collins.

Streeter, D., Hart-Davies, C., Hardcastle, A., Cole, F., & Harper, L., (2009), *Collins Flower Guide*, Harper Collins.

Svensson, L., (2009) *Collins Bird Guide: The most complete guide to the birds of Britain and Europe*, 2nd Ed., Harper Collins.

The Wildlife and Countryside Act, HMSO. Anon, 1981.

Tranche 2 Action Plans: Terrestrial and Freshwater Habitats. UK Biodiversity Group, 1998. Crown Copyright.

Wembridge, D., (2012), *Urban Mammals a concise guide*, Whittet Books Ltd.

Williams, J., (2010), *The Otter*, Merlin Unwin Books.

http://www.english-nature.org.uk/citation/citation_photo/1003238.pdf. 1984

http://www.ukbap.org.uk/UKPlans.aspx?ID=7

http://www.natureonthemap.org.uk/identify.aspx

11.0 APPENDICES

11.1 Appendix 1

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T: 01377 200242
E: info@woldecology.co.uk
W: www.woldecology.co.uk

11.2 Appendix 2

NORTH

Not to Scale

Drawing title:
Phase 1 Habitat Map

	Broadleaved plantation
	Scattered trees
SI	Semi-improved grassland
A	Amenity grassland
	Bare ground
	Building
	Application Site boundary
	Target Note

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T: 01377 200242
E: info@woldecology.co.uk
W: www.woldecology.co.uk

11.3 Appendix 3 – Summary of desktop study

Organisation.	Response Summary.	Date.
Natural England.	Local designations.	July 2020
Natural England.	UKBAP species and habitats within 2 km of the Application Site.	July 2020
North and East Yorkshire Ecological Data Centre.	Species lists within 2 km of the Application Site.	July 2020
www.magic.gov.uk	European Protected species licenses within 2km of the Application Site.	July 2020
Wold Ecology network.	Species lists within 5 km of the Application Site.	2006 – to present day.

11.4 Appendix 4 - Protected Species Legislation

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

Legislation	Schedule 5 Wildlife and Countryside Act 1981 (As amended) Part 1							EPS	PBA
	S1 (1)	S1 (4 & 5)	S9 (1)	S9 (2)	S9 (4)(a)	S9 (4)(b)	S9 (5)		
Adder *Vipera berus*			✓*				✓		
Common lizard *Zootoca vivipara*			✓*				✓		
Grass snake *Natrix helvetica*			✓*				✓		
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*			✓	✓	✓	✓	✓	✓	
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 2017 (as amended)
PBA = Protection of Badgers Act 1992
*** = Only part of this section**

Legislative Text

Wildlife and Countryside Act 1981 (as amended)

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

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

S.1 (1) intentionally kill, injure, or take any wild bird or their eggs or nests.
S.1 (4) intentionally or recklessly kill, injure, or take any wild bird listed on Schedule 1 of the Act, or their eggs or nests (special penalties apply if convicted) (For a full list of Schedule 1 bird species see the full text of the Wildlife and Countryside Act 1981 [as amended])
S.1(5) (a) disturb any wild bird listed on Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
(b) disturb dependent young of such a bird
S.9 (1) intentionally or recklessly kill, injure or take any wild animal included in Schedule 5 (certain reptiles are only protected from killing and injuring);
S.9 (2) be in possession or control of any live or dead wild animal included in Schedule 5 or any part or derivative;
S.9 (4) (a) intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a Schedule 5 animal for shelter or protection;
S.9 (4) (b) disturb any such animal while it is occupying such a structure or place which it uses for that purpose
S.9 (5) (a) sell, offer for sale, possess or transport any live or dead wild animal included in Schedule 5 for the purpose of sale or any part or derivative;
S.9 (5) (b) advertise for buying or selling such things.

European Protected Species (EPS)

EPS and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats & Species Regulations, 2017 (as amended). 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 badges
- 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.

11.5 Appendix 5 - Staff Profiles

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

Job title: Ecologist.

Career Summary.

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

Project Experience in last 5 years.

- Daniel has undertaken over 350 bat activity surveys since 2010 including dawn and dusk surveys at a range of sites across England.
- Daniel specialises in reptile, amphibian, bird and mammal surveys and has undertaken a wide range of surveys for species including otter, water vole, badger, adder, grass snake, common lizard, slow worm and great crested newt. This includes writing and contributing towards mitigation strategies and habitat enhancements where appropriate. He has also contributed to white clawed crayfish surveys.

- Daniel has undertaken a large number of Phase 1 ecology surveys and Preliminary Ecological Appraisals and EIA assessments.
- Daniel has undertaken and helped supervise a seabird surveys on the North Yorkshire coastline at an internationally important seabird colony on the behalf or Natural England and the Environment Agency. This has involved leasing with a variety of conflicting stakeholders to mitigate against potential adverse impacts to the colony.

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

Scope of Assessment

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

Designated Sites

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

Habitats outside Designated Sites

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

Ancient Woodland

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

Protected Species

The species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in nature conservation legislation i.e. the Wildlife and Countryside Act 1981, as amended, and the Habitats and Species Regulations 2017, as amended.

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, extended phase 1 habitat survey and preliminary ecological appraisal for any reason, including the following:

- The development is near a designated site and consultation with the relevant regulator is required 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 and preliminary ecological appraisal 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 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.