

From: [REDACTED]
To: [Immingham Eastern Ro-Ro Terminal](#)
Subject: TRO30007 - Immingham Eastern Ro-Ro Terminal - section 51 Advice - Preliminary Ecological Appraisal
Date: 15 March 2023 15:24:31
Attachments: [Annex C Wold Ecology PEAR July 2021.pdf](#)

Dear Lily,

Further to our various email correspondence regarding the above, there are a number of items mentioned in the section 51 Advice of 6 March with which I need to deal – inevitably, I am afraid, not all at the same time.

Dealing with these entirely out of order (!) on the last page of the section 51 Advice, you reference that Annex C of ES Appendix 6.2: Preliminary Ecological Appraisal (Doc 8.4.06(b) references a link to the Wold Ecology Ltd Preliminary Ecological Appraisal which does not appear to work.

With apologies for including the link in the first place – it slipped through the net - that document is now attached.

Best regards,

Brian

Brian Greenwood
Partner | Clyde & Co LLP

CLYDE&CO

The St Botolph Building | 138 Houndsditch | London EC3A 7AR | UK
Main +44 207 876 5000 | Fax +44 207 876 5111 | [REDACTED]

If our account details change, we will notify these to you by letter, telephone or face-to-face and never by email.

Clyde & Co's privacy notice can be found here [Privacy notice: Clyde & Co](#)

Please could we request that all correspondence with us is sent electronically where possible. For matters subject to the jurisdiction of England & Wales and where you have agreed with the lawyer with the conduct of the case that email service is appropriate, please use this address service@clydeco.com for service, subject to the restrictions set out [here](#) . Please copy your email to the lawyer with conduct of the case and include our Clyde & Co reference.

This email is sent for and on behalf of Clyde & Co LLP, a limited liability partnership registered in England and Wales under number OC326539 and with its registered office at The St Botolph Building, 138 Houndsditch, London, EC3A 7AR, United Kingdom (Tel: +44 20 7876 5000. Fax: +44 20 7876 5111). Clyde & Co LLP is authorised and regulated by the Solicitors Regulation Authority under number 460690 and uses the word "partner" to refer to a member of the LLP, or an employee or consultant with equivalent standing and qualifications. A list of members is available at: www.clydeco.com.

This email and any attachments are confidential and may also be privileged. If you have received this message in error, please notify the sender immediately, destroy this email and any attachments, and do not use, copy, store and/or disclose to any person this email and any attachments.

WOLD ECOLOGY LTD



Chris Toohie M Sc. MCIEEM
[Redacted]@woldecology.co.uk
[Redacted]

Immingham, North East Lincolnshire

PRELIMINARY ECOLOGICAL APPRAISAL

July 2021

	Staff Member	Position
Habitat Survey and Preliminary Ecological Appraisal :	Daniel Lombard BSc MCIEEM	Ecologist
Report prepared by :	Chris Toohie MSc MCIEEM Daniel Lombard BSc MCIEEM	Ecologist

Disclaimer:

This report and its content are copyright © 2021 Wold Ecology Ltd. All rights reserved.

You may not distribute or commercially exploit the content of this report until a non-draft version of this document has been issued and payment in full has been received by Wold Ecology Ltd.

Any unauthorised redistribution or reproduction of part or all the contents of this report will constitute an infringement of copyright.

This report was prepared by Wold Ecology Limited solely for use by British Ports Association. This report is not addressed to and may not be relied upon by any person or entity other than British Ports Association for any purpose without the prior written permission of Wold Ecology Ltd. Wold Ecology Ltd, its directors, employees and associates accept no responsibility or liability for reliance upon or use of this report (whether or not permitted) other than by British Ports Association for the purposes for which it was originally commissioned and prepared.

In producing this report, Wold Ecology Ltd has relied upon information provided by others. The completeness or accuracy of this information is not guaranteed by Wold Ecology Ltd.

DOCUMENT CHECKING

Issue No.	Date.	Status.	Verified by.
1	03/08/2021	Draft for internal review.	Daniel Lombard B Sc MCIEEM
2	10/08/2021	Draft for client review.	Chris Toohie MSc MCIEEM
3	N/A	Submission of non-draft version for client.	N/A

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	2
2.0	INTRODUCTION	4
3.0	COMPANY PROFILE	7
4.0	HABITAT SURVEY METHODOLOGY	9
5.0	LIMITATION OF FIELD SURVEY	10
6.0	DESK TOP STUDY	11
7.0	PHASE 1 FIELD SURVEY RESULTS	23
8.0	SPECIES APPRAISAL	27
9.0	HABITATS APPRAISAL	40
10.0	BIBLIOGRAPHY	43
11.0	APPENDICES	45

1.0 EXECUTIVE SUMMARY

- 1.1 In July 2021, Wold Ecology was commissioned by Associated British Ports to undertake an extended phase 1 habitat survey and a preliminary ecological appraisal at land at Immingham Docks, (national grid reference TA 19779 15242) in North East Lincolnshire.
- 1.2 In order to accomplish the brief, a desk top study, external consultation, a habitat classification field survey and preliminary ecological appraisal was undertaken by Wold Ecology staff.
- 1.3 The habitats within the Application Site comprises scattered trees, improved grassland, spoil heaps, bare ground, ephemeral/short perennial vegetation and scrub interspersed with several scattered trees located within an industrialised location.
- 1.4 The proposed development involves site clearance and new commercial development 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
Proceed with caution, timing constraints	Birds (General)	The site is suitable for nesting birds with various designations. Any scrub and tall grassland 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.
	Little Ringed Plover	The only suitable structure on site is the water tower, no evidence of peregrine was noted and based on current information this building will not be removed or disturbed as part of the proposed development. If works are to occur within 80m of this building between late February and July, it should be checked for presence of breeding birds.
	Peregrine	Opportunities for breeding little ringed plover are abundant throughout the open habitats on site. These are regularly used for car storage and therefore unsuitable habitat; however, the ephemeral breeding biology of this species means if suitable open spaces become available, they could attempt to breed here. If works are to occur between late March and July, it should be checked for presence of breeding birds.
Proceed with caution	Badger	Whilst no evidence of badgers was noted some sections of scrub were impenetrable at the time of the survey. It is recommended that a walkover survey is undertaken during winter when leaf cover is reduced, and badger activity is more visible.

No ecological constraints.	Invasive non-native species	No invasive species recorded on site.
	Bats	
	Great crested newt	No further surveys recommended.
	Reptiles	
	Habitats	

- 1.6 This report is valid until **January 2023**. 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 Ltd if you do not wish the species accounts and grid references to be shared.

2.0 INTRODUCTION

2.1 In July 2021, Wold Ecology was commissioned by Associated British Ports to undertake an extended phase 1 habitat survey and a preliminary ecological appraisal at land at Immingham Docks, (national grid reference TA 19779 15242) in North East Lincolnshire.

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 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 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, 2km from the Application Site.
 - A phase 1 habitat survey.
 - Preliminary ecological appraisal.
- 2.11 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.
- 2.12 Where Ecological Impact Assessments (EcIA) is not part of an Environmental Impact Assessment, the views of the competent authority, standing advice and use of a Preliminary Ecological Appraisal can assist with the scoping of a potential EcIA.
- 2.13 Consultation with the planning ecologists for Hull City Council, Ryedale District Council and East Riding of Yorkshire Council (July 2020) confirmed that EcIA's are only usually required when developments are likely to have significant ecological impact effects and that developments of this size are unlikely to require a specific EcIA. Wold Ecology Ltd have undertaken 300 Preliminary Ecological Appraisals between 2015 and 2020 for similar sites and schemes; this report format and content within has been accepted by Local Authority planning ecologists during this time period without the request for an additional EcIA. This report format, which is also commonly used by ecological consultants, is widely accepted in support of planning applications.
- 2.14 Where further ecological surveys have been recommended, the impact assessment will be included within those specific reports.
- 2.15 Whilst an EcIA on its own is not a statutory requirement, the following principles which underpin EcIA are considered 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.

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 Ltd employs several experienced and qualified staff/associates to undertake specialist ecological contracts.
- 3.2 Wold Ecology Ltd 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 (EcIA).
 - **Ecological Impact Assessments and Preliminary Ecological Appraisals**
 - **European Protected Species Licenses**
Bat Licenses - Chris Toohie is one of 186 Natural England Registered Consultant (February 2021) 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, Driffeld 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 HABITAT SURVEY METHODOLOGY

- 4.1 A field survey was undertaken at the Application Site on 22nd July 2021. 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	22/07/2021	5mph	SE	21°C	21°C	None	10%

- 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). The CIEEM 'Guidelines for Preliminary Ecological Appraisal - Second Edition' (December 2017) state that this is an appropriate habitat classification system.
- 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 field 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 250m 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 ecology report reflect relevant 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 and public land, 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 250m of an Application Site and whilst every effort was made to access all ponds, Wold Ecology Ltd do not guarantee that every pond within 250m have been included within this assessment.
- 5.5 However, a phase 1 habitat survey and preliminary ecological appraisal of this nature, supported by a thorough desk top survey, is sufficient to make a number of informed assumptions about the ecology of the site.

6.0 DESKTOP STUDY

6.1 General description

6.1.1 The Application Site is located within the boundaries of the wider Immingham Dock complex, in an industrialised location. The Application Site is approximately 30ha and is immediately surrounded by dock infrastructure, storage yards, industrial works, warehouses, brownfield sites and wider agricultural habitats; the River Humber is approximately 700m north east of the Application Site.

6.1.2 Habitats within 2km surrounding Immingham Dock is primarily industrialised areas, saltmarsh and estuarine habitats within a wider low-lying agricultural landscape 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 River Humber Estuary (700m north) and associated riparian habitats provide habitat connectivity to the wider countryside.

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

- Buildings – farm buildings and residential properties
- Golf Course
- Hedgerow
- Mature trees and woodland
- Long Strip (Plantation)
- Houlton's Covert
- Arable
- Mature private gardens
- Ponds and watercourses
- River Humber
- Humber Estuary
- North Beck Drain
- Middle Drain
- Grazed pasture

6.2 Desktop Study.

6.2.1 Natural England, Lincolnshire Ecological Records Centre (LERC), 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 Statutory Sites

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

Code	Designation	Status	Name
1	SSSI	Notified	Humber Estuary
2	SAC	Designated	Humber Estuary
3	SAC	Classified	Humber Estuary
4	Ramsar	Listed	Humber Estuary

6.2.3.2 The Humber Estuary is described by Natural England as:

- Description - The Humber is the second-largest coastal plain estuary in the UK, comprising of extensive wetland and coastal habitats and covers 370 km². The inner estuary supports extensive areas of reedbed, with areas of mature and developing saltmarsh backed by grazing marsh in the middle and outer estuary. It is designated as a Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar Site and has numerous Sites of Special Scientific Interest (SSSI). On the north Lincolnshire coast, the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools.
- Qualifying features - The Humber Estuary SAC and SPA host the following habitats: Atlantic salt meadows *Glauco-Puccinellietalia maritimae*; coastal lagoons; dunes with *Hippophae rhamnoides*; embryonic shifting dunes; estuaries; mudflats and sandflats not covered by seawater at low tide; fixed dunes with herbaceous vegetation (grey dunes); *Salicornia spp.* and other annuals colonising mud and sand; sandbanks which are slightly covered by sea water all the time; shifting dunes along the shoreline with *Ammophila arenaria* (white dunes). The site also hosts the following species: grey seal *Halichoerus grypus*; river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus*.
- The site supports the following species: avocet *Recurvirostra avosetta*; bar-tailed godwit *Limosa lapponica*; bittern *Botaurus stellaris*; black-tailed godwit *Limosa limosa*; dunlin *Calidris alpina*; golden plover *Pluvialis apricaria*; hen harrier *Circus cyaneus*; knot *Calidris canutus*; little tern *Sternula albifrons*; marsh harrier *Circus aeruginosus*; redshank *Tringa totanus*; ruff *Philomachus pugnax*; shelduck *Tadorna tadorna*, as well as for its waterbird assemblage.

6.2.3.3 Additionally, the Humber Estuary SSSI is described by Natural England as:

- **Reasons for Notification:** The Humber Estuary is a nationally important site with a series of nationally important habitats. These are the estuary itself (with its component habitats of intertidal mudflats and sandflats and coastal saltmarsh) and the associated saline lagoons, sand dunes and standing waters. The site is also of national importance for the geological interest at South Ferriby Cliff (Late Pleistocene sediments) and for the coastal geomorphology of Spurn. The estuary supports nationally important numbers of 22 wintering waterfowl and nine passage waders, and a nationally important assemblage of breeding birds of lowland open waters and their margins. It is also nationally important for a breeding colony of grey seals *Halichoerus grypus*, river lamprey *Lampetra fluviatilis* and sea lamprey *Petromyzon marinus*, a vascular plant assemblage and an invertebrate assemblage.
- **Estuary** - The Humber Estuary is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. The range of salinity, substrate and exposure to wave action influences the estuarine habitats and the range of species that utilise them. These include a breeding bird assemblage, winter and passage waterfowl, river and sea lamprey, grey seals, vascular plants and invertebrates.
- The extensive mud and sand flats support a range of benthic communities, which in turn are an important feeding resource for birds and fish. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into the tidal rivers.
- The lower saltmarsh of the Humber is dominated by common cordgrass *Spartina anglica* and annual glasswort *Salicornia* communities. Low to mid marsh communities are mostly represented by sea aster *Aster tripolium*, common saltmarsh grass *Puccinellia maritima* and sea purslane *Atriplex portulacoides* communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch *Elytrigia atherica* (*Elymus pycnanthus*) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed *Phragmites australis* fen and sea club rush *Bolboschoenus maritimus* swamp with the couch grass *Elytrigia repens* (*Elymus repens*) saltmarsh community. On the southern coastal fringe of the estuary on the north Lincolnshire coast, a wide range of saltmarsh communities are present. Good height zonation is found, with levee development along creeks creating extensive depressions holding waterlogged saltmarsh types. Upper saltmarsh is common here. These saltmarsh communities are an integral part of the functioning dynamic estuarine system. They provide nutrients for the mudflats and sandflats and feeding and roosting areas for nationally important numbers of ducks, geese and waterfowl.
- **Saline lagoons** - Within the Humber Estuary SSSI there are good examples of four of the five physiographic types of saline lagoon. These are the isolated lagoon at Humberston Fitties, the silled lagoon at Northcoates 'Point A', the percolation lagoon at Northcoates 'Point B', and the sluiced lagoons at Blacktoft Sands. These lagoons support a number of notable lagoon specialist species including the lagoon sand shrimp *Gammarus insensibilis*, the amphipod *Gammarus chevreuxi*, the chironomid midge *Glyptotendipes barbipes* and a breeding colony of avocets *Recurvirostra avosetta*.

- **Sand dunes** - The sand dunes within the Humber Estuary are features of the outer estuary on both the north and south banks particularly on Spurn and along the Lincolnshire coast south of Cleethorpes. Examples of both strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. Native sea buckthorn *Hippophae rhamnoides* scrub also occurs on both sides of the estuary. The nationally scarce, bulbous meadow grass *Poa bulbosa* is found on the sand dunes at Cleethorpes, and the nationally scarce suffocated clover *Trifolium suffocatum* is found at Spurn.
- **Standing waters** - The most extensive area of standing waters on the Humber occurs at Barton and Barrow. The complex of disused clay pits vary in size and salinity and are a mosaic of open waters. Similar pits occur at other locations on the estuary, such as at Faxfleet and Haverfield Pits. The pits support important breeding birds such as marsh harriers *Circus aeruginosus* and bittern *Botaurus stellaris* and provide roosting and feeding areas for waterfowl.
- **Wintering and passage waterfowl species** - The estuary regularly supports 22 species of wintering waterfowl in nationally important numbers. These are bittern, dark-bellied brent goose *Branta bernicla bernicla*, shelduck *Tadorna tadorna*, wigeon *Anas penelope*, teal *Anas crecca*, pochard *Aythya ferina*, scaup *Aythya marila*, goldeneye *Bucephala clangula*, oystercatcher *Haematopus ostralegus*, avocet, ringed plover *Charadrius hiaticula*, golden plover *Pluvialis apricaria*, grey plover *Pluvialis squatarola*, lapwing *Vanellus vanellus*, knot *Calidris canutus*, sanderling *Calidris alba*, dunlin *Calidris alpina*, black-tailed godwit *Limosa limosa*, bar-tailed godwit *Limosa lapponica*, curlew *Numenius arquata*, redshank *Tringa totanus* and turnstone *Arenaria interpres*.
- In addition, nine species of passage waders regularly occur in nationally important numbers on the Humber Estuary. These are: ringed plover, grey plover, sanderling, dunlin, ruff *Philomachus pugnax*, black-tailed godwit, whimbrel *Numenius phaeopus*, redshank and greenshank *Tringa nebularia*.
- Wintering waterfowl and passage waders are widely distributed throughout the site, the distribution of individual species reflecting habitat distribution and species ecology. For example, the sandier sediments of the outer estuary are characterised by an assemblage including knot and grey plover, while the largest concentrations of wigeon are found in the saltmarshes of the upper estuary. At high tide, large mixed flocks are concentrated into key roost sites which are at a premium due to the combined effects of extensive historical land claim, coastal squeeze and the acute lack of grazing marsh and grassland on both banks of the estuary.
- **Breeding bird assemblage of lowland open waters and their margins** - The Humber Estuary supports a breeding bird assemblage of lowland open waters and their margins, including nationally important numbers of bittern, marsh harrier *Circus aeruginosus*, avocet and bearded tit *Panurus biarmicus*. Breeding bitterns first returned to the estuary in 2000, following an absence of over 20 years, and breeding avocets were first recorded here in 1992. The numbers of avocets in particular have increased substantially in recent years. The following species also contribute to the assemblage: little grebe *Tachybaptus ruficollis*, great crested grebe *Podiceps cristatus*, mute swan *Cygnus olor*, shelduck, gadwall *Anas strepera*, shoveler *Anas chrypeata*, pochard, tufted duck *Aythya fuligula*, water rail *Rallus aquaticus*, little ringed plover *Charadrius dubius*, snipe *Gallinago gallinago*, redshank, common tern *Sterna hirundo*, cuckoo *Cuculus canorus*, kingfisher *Alcedo atthis*, yellow wagtail *Motacilla flava*, grasshopper warbler *Locustella naevia*, sedge warbler *Acrocephalus schoenobaenus*, reed warbler *Acrocephalus scirpaceus*, and reed bunting *Emberiza schoeniclus*. The distribution

of the breeding species that make up the assemblage is concentrated within (although not restricted to) the clay pits, lagoons and reedbeds at Far Ings – Barton, Read’s Island and Blacktoft Sands.

- **Grey seals** - The Humber Estuary supports one of the largest grey seal breeding colonies in England with a high rate of pup production compared to other UK sites.
- **River lamprey and sea lamprey** - The Humber Estuary acts as an important migration route for both river lamprey and sea lamprey between coastal waters and their spawning areas. Both species are present in the estuary to some degree all year round, although numbers increase during summer and autumn periods when migration takes place.
- **Vascular plant assemblage** - The site supports an important vascular plant assemblage, including at least ten nationally scarce species. These are characteristic of coastal and wetland habitats. They are bulbous foxtail *Alopecurus bulbosus*, bulbous meadow-grass, divided sedge *Carex divisa*, sea buckthorn, slender hare’s-ear *Bupleurum tenuissimum*, spiral tasselweed *Ruppia cirrhosa*, rush-leaved fescue *Festuca arenaria*, curved hard-grass *Parapholis incurva*, suffocated clover and sea clover *Trifolium squamosum*. Common couch subspecies *Elytrigia repens ssp. arenosa* has also been included as a notable taxon. In addition, the Humber is of phytogeographical interest, with several scarce species of vascular plant occurring at or close to the northern or southern limits of their range on the east coast of Britain. Invertebrate assemblage Assemblages of terrestrial and aquatic invertebrates are well represented across the Humber Estuary and its hinterlands. These include many scarce and threatened species across a range of taxa, especially the Coleoptera and Lepidoptera. For example, the sand dunes at Spurn support the ground beetle *Amara lucida*, the white colon moth *Sideridis albicolon* and the shore wainscot moth *Mythimna litoralis*. Saltmarshes such as those at Welwick provide foraging grounds for the solitary bee *Colletes halophilus*, which is closely associated with the flowers of sea aster *Aster tripolium*. Sea aster is also the larval food plant for the starwort moth *Cucullia asteris*. Further upstream, brackish and freshwater reedbeds support the reed-beetle *Donacia clavipes* and the silky wainscot moth *Chilodes maritimus*, both of which are associated with common reed. Areas of willow *Salix spp.* scrub within reedbeds are also important and are the larval food plant of the cream-bordered green-pea moth *Earias clorana*. Fully aquatic species include the water beetles *Agabus conspersus* and *Helophorus fulgidicollis*.

6.2.3.4 The Statutory sites associated with the Humber Estuary are located 700m north of the Application Site. Consequently, the impact to the habitats within the Statutory Sites is considered to be negligible.

6.2.4 Non-Statutory Sites

6.2.4.1 The following Non-statutory Sites are within 2 km of the Application Site (see figure 2):

Code	Designation	Status	Name
1	LWS	Selected	Homestead Park Pond
2	LWS	Selected	Laporte Road Brownfield Site

6.2.4.2 The Non-statutory Sites are located over 1km from the Application Site. Consequently, the impact to the Non-statutory Sites is considered to be negligible.

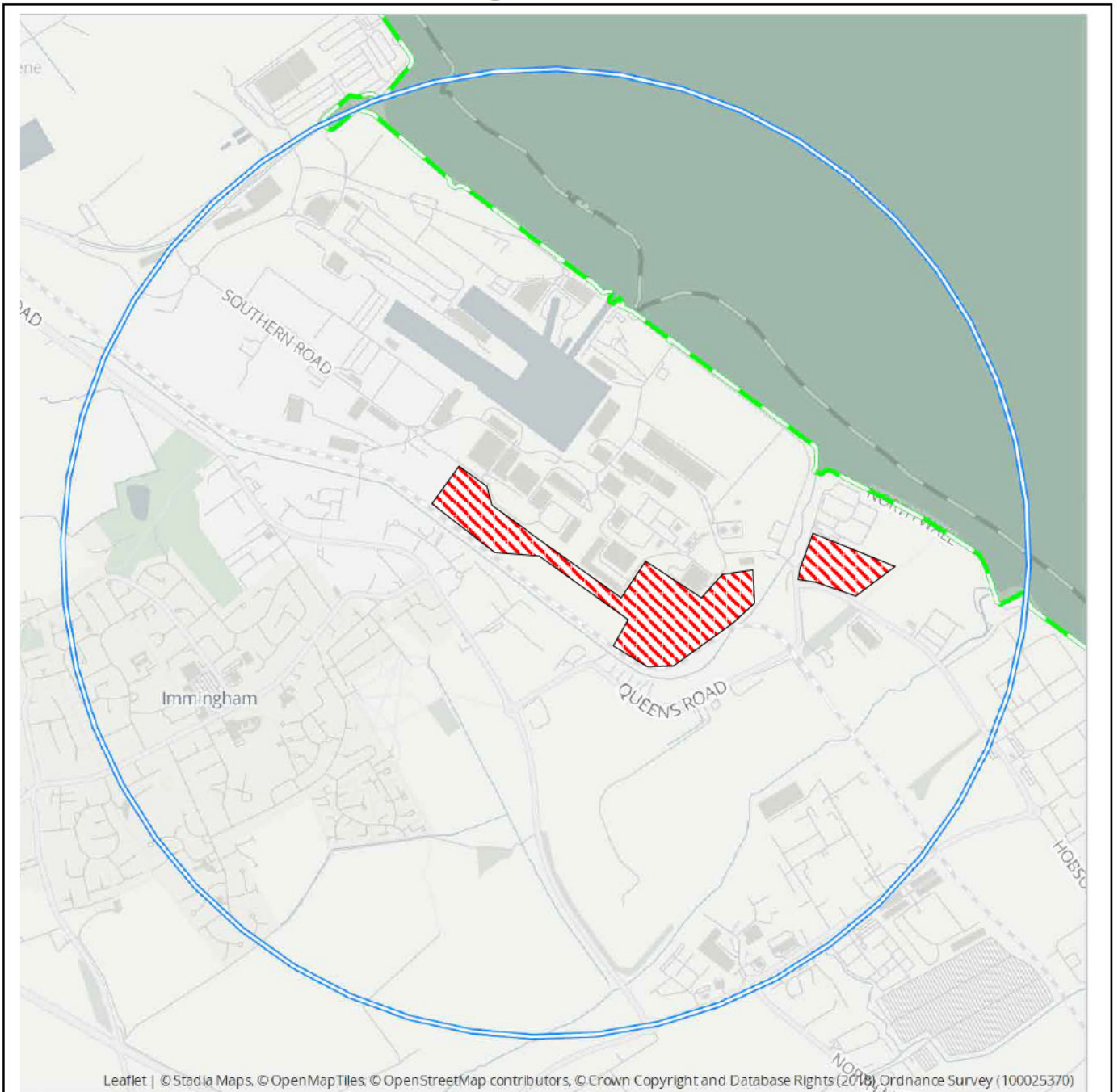
6.2.5 Natural England Habitat Inventories

6.2.5.1 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).

Type	Habitat	Survey Date	Area (ha)
Priority Habitat	Lowland meadows	2008	1.78
Priority Habitat	Open mosaic habitats on previously developed land	2015	2.93
Priority Habitat	Reedbeds	2015	0.1

6.2.5.2 The Natural England Priority Habitats will not be impacted on due to the distance between the Application Site and the notable habitat, which is greater than 1km. Consequently, the impact to the Natural England Priority Habitat is considered to be negligible.

Figure 1.




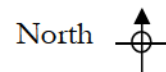
Leaflet | © Stadia Maps, © OpenMapTiles, © OpenStreetMap contributors, © Crown Copyright and Database Rights (2018), Ordnance Survey (100025370)

Space restrictions on the map may result in some sites not being labelled.

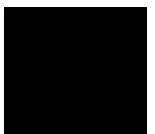
- | | |
|---|--|
|  Site of Special Scientific Interest |  Search area |
|  Special Area of Conservation |  LERC boundary |
|  Ramsar Site | |

Statutory Sites Map

-  Application Site



WOLD ECOLOGY LTD




E: info@woldecology.co.uk
 W: 

Figure 2.

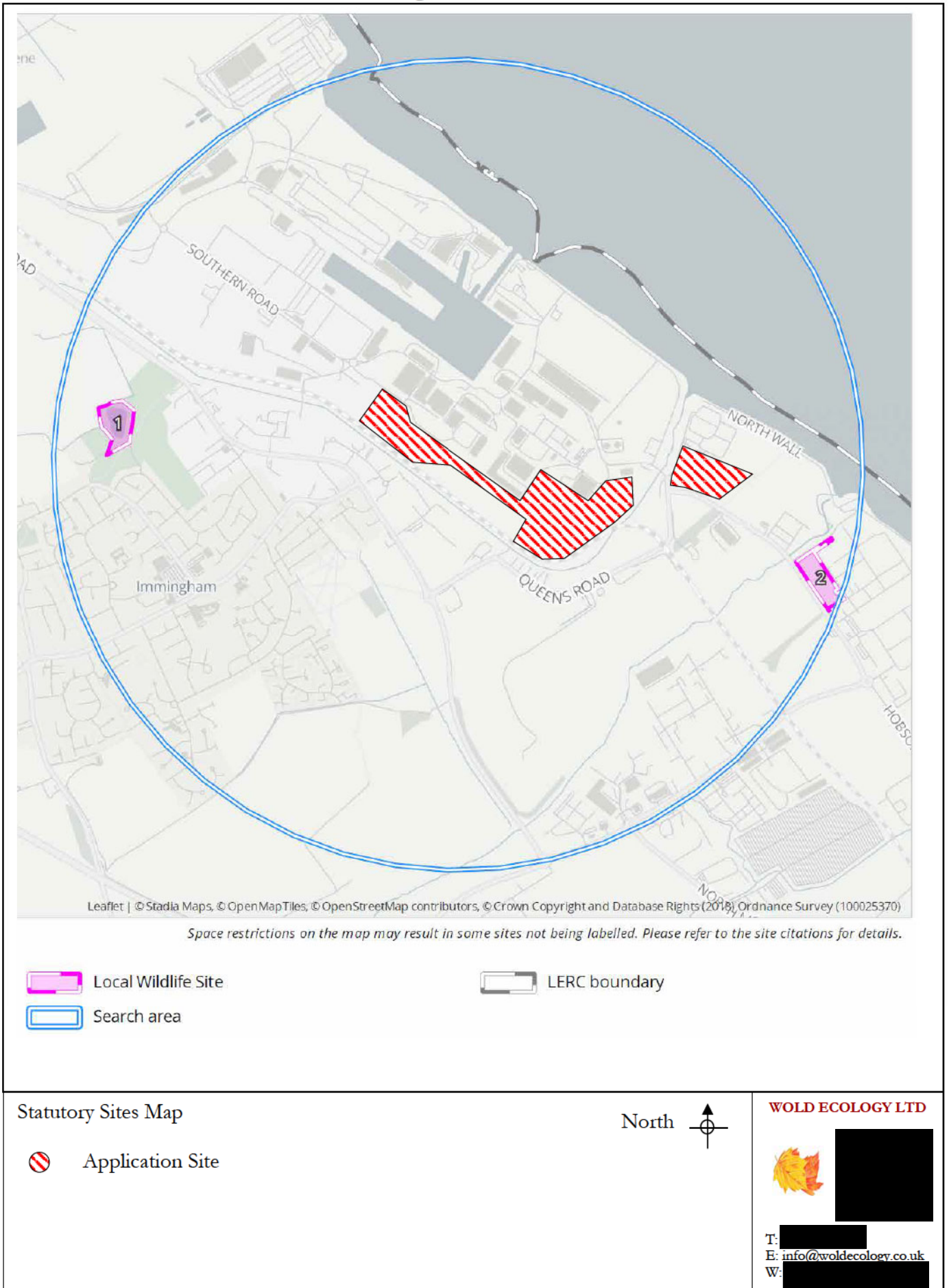
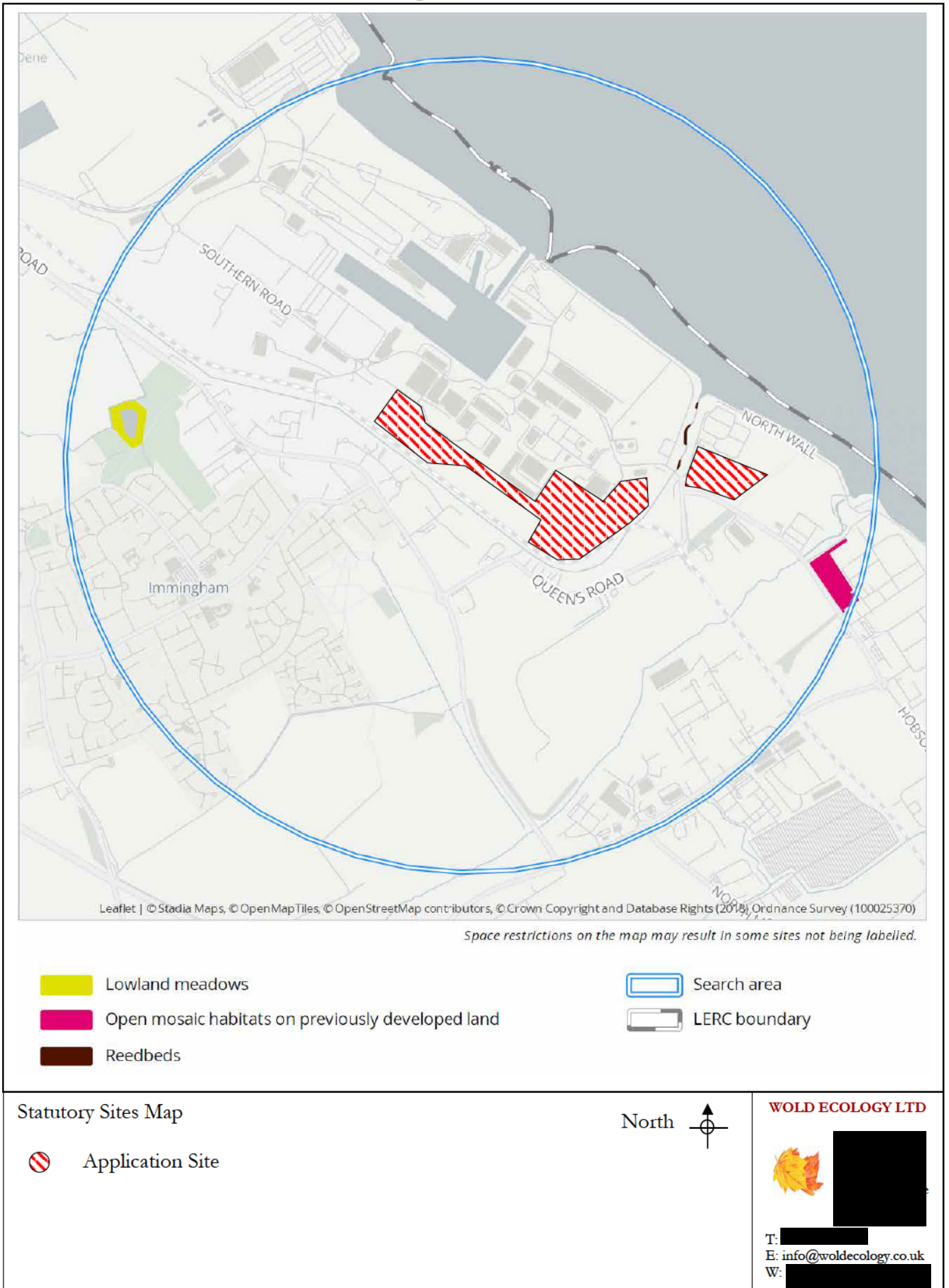


Figure 3.



- 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 41 Humber Estuary and is summarised below:
- 6.3.3.1 The Humber Estuary National Character Area (NCA) focuses on the open and expansive waters of the Humber where it flows in to the North Sea and the adjacent low-lying land. Several major rivers flow into the Humber, including the Trent, Don, Aire, Ouse and Hull, thus draining one-fifth of England. This is a low-lying estuarine landscape, with extensive stretches of intertidal habitats including mudflats, salt marsh and reedbeds, coastal dunes and wetlands along the side of the estuary. The estuary is of international significance, as a Ramsar site and is designated as a Special Protection Area for the large flocks of overwintering, migratory and breeding birds. The estuary is also designated as a Special Area of Conservation for its geomorphology and range of intertidal habitats, its lampreys and breeding colonies of grey seals. The area is particularly important for its dynamic geomorphological processes, the most notable of which form the ever-changing, long, remote Spurn peninsula, now designated as Heritage Coast.
- 6.3.3.2 The adjacent land has largely been reclaimed, resulting in large fields bounded by ditches, which form high-quality arable cropping land. There is very little woodland in the rural areas, where the many ditches form important networks linking the few other semi-natural habitats.
- 6.3.3.3 There are strong contrasts within this landscape. Much of it is open and expansive, with long views and tranquil and remote places, such as Spurn Point, Blacktoft and Skitter Ness, or quiet rural areas dominated by farming. These areas contrast with the large towns such as Hull and Immingham, with the industrial complexes, and with the estuary itself which is a busy trading route.
- 6.3.3.4 Key challenges include integrating the development pressures associated with the towns and ports with the protection and enhancement of the landscape and the internationally significant habitats and species. Rising sea levels are another challenge which, when combined with flood flows in the many big rivers that flow into the estuary, can cause major flood events. Addressing the coastal squeeze that is affecting the important intertidal habitats is another challenge, as is understanding

and allowing the natural dynamic estuarine processes, in particular those that shape the Spurn peninsula.

6.3.3.5 The following Statements of Environmental Opportunities (SEO) are relevant to the Application Site:

- **SEO 2:** Encourage a strategic approach to the planning of land uses around the estuary to address the pressures of climate change and development, ensuring that natural processes continue to function, the estuary's biodiversity value is protected and enhanced, and its open and expansive character is retained.

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 – LERC 2021 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*, noctule *Nyctalus noctula* and common pipistrelle *Pipistrellus pipistrellus* within the surrounding 2km radius of the Application Site. (source – LERC 2021).
- Wold Ecology employees, field surveyors and network of associate ecologists have recorded brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula*, whiskered *Myotis mystacinus*, soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* within 5km of the Application Site. 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

- Great crested newt *Triturus cristatus* is recorded within the surrounding 2km radius with no records since 1977 (source – LERC 2021). There are no records of great crested newt for ponds located within 1km of the Application Site.
- There are no Natural England eDNA records within 2km of the Application Site.
- There are no great crested newt Natural England development licenses within 1km of the Application Site (source – www.magic.gov.uk).

6.4.4 Water vole

- Water vole *Arvicola amphibious* is recorded within the surrounding 2km radius with no records within or immediately adjacent to the Application Site boundaries (source - LERC 2021)

6.4.5 Otter

- Otter *Lutra lutra* is recorded within the surrounding 2km radius around the Application Site (source – LERC 2021).

6.4.6 Reptiles

- There are no reptile records within 2km of the Application Site (source – LERC 2021).

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
Scrub (dense/continuous)	A2.1
Scattered trees mixed	A3.3
Semi improved neutral grassland	B2.2
Open standing water	G1
Spoil	I2.2
Amenity grassland	J1.2
Ephemeral/short perennial	J1.3
Fence	J2.4
Bare ground	J4

7.2 Scrub (dense/continuous)

7.2.1 This habitat occurs in isolated locations within the Application Site where it forms dense impenetrable stands. Scattered scrub away from these habitats is rare and limited to occasional boundary shrubs or isolated bushes and is not extensive enough to map. Scrub is a successional habitat on site and in most places has arisen through a lack of disturbance, causing reversion of grassland habitats into a woodier vegetation structure. Some evidence of further reversion to woodland habitats is beginning in eastern parts of the site. Scrub varies in age on site with bramble *Rubus fruticosus* sections likely to be less than 20 years old, compared with the section of hawthorn *Crataegus monogyna* to the west of the water tower which is approaching 80 years old or more.

7.2.2 Species composition associated with this habitat includes bramble, hawthorn, sycamore *Acer pseudoplatanus*, goat willow *Salix caprea*, butterfly bush *Buddleia davidii*, field rose *Rosa arvensis*, elder *Sambucus nigra*, box *Buxus sempervirens* and dewberry *Rubus caesius*.

7.3 Scattered Trees (Mixed)

7.3.1 A small number of scattered trees occur within the Application Site boundaries, these comprise a mixture of deciduous and coniferous species. These trees are a mixture of naturally regenerated specimens associated with scrub and marginal habitats, as well trees which have been planted for aesthetic purposes and are all below 50 years of age and in relatively good health; no deadwood communities occur within these trees.

7.3.2 Species diversity includes Lawson cypress *Chamaecyparis lawsoniana*, silver birch *Betula pendula* and *Betula pendula crispa*, grey poplar *Populus alba x tremula*, London plane *Platanus x acerifolia*, balsam poplar cultivar *Populus candicans* and goat willow.

7.4 Semi-improved grassland

7.4.1 This habitat occurs sporadically around the edges of the Application Site along railway sidings and in undisturbed corners of the site, no longer regularly subjected to disturbance. In eastern parts of the site, this habitat is beginning to form into

scrub; the soils appear to be nutrient rich with some saline influence. This habitat is relatively well drained, except localised areas where surface run-off is caught in undulations. Tall ruderal stands (C3.1) merge regularly throughout this habitat and have been lumped together as the distinction between the two is difficult to ascertain in certain sections, the same can be said for more open scattered areas of scrub (A2.2) albeit scrub habitats make up less than 5% of this habitat type. It is likely without interference scrub would eventually dominate these habitats. In areas this habitat has grown across discarded waste materials and spoil.

- 7.4.2 Species are dominated by common reed *Phragmites australis*, cocksfoot *Dactylus glomerata*, creeping bent *Agrostis stolonifera*, common figwort *Artemisia vulgaris*, soft rush *Juncus effusus*, teasel *Dipsacus fullonum*, curled dock *Rumex crispus*, creeping thistle *Cirsium arvense*, false oat grass *Arrhenatherum elatius*, broad-leaved dock *Rumex obtusifolius*, common mugwort *Artemisia vulgaris*, stinging nettle *Urtica dioica*, tufted vetch *Vicia cracca*, perennial sow thistle *Sonchus arvensis*, common ragwort *Jacobaea vulgaris*, great willowherb *Epilobium hirsutum*, rosebay willowherb *Chamerion angustifolium*, cleavers *Galium aparine*, hemlock *Conium maculatum*, common fleabane *Pulicaria dysenterica*, Yorkshire fog *Holcus lanatus*, ploughman's spikenard *Inula conyza*, teasel *Dipsacus fullonum*, spear thistle *Cirsium vulgare*, Italian ryegrass *Lolium multiflorum*, perennial ryegrass *Lolium perenne*, common couch *Elymus repens*, hedge mustard *Sisymbrium officinale*, viper's bugloss *Echium vulgare*, fat-hen *Chenopodium album*, tall melilot *Melilotus altissimus* and barren brome *Bromus sterilis*.

7.5 Open Standing Water

- 7.5.1 A small linear sump (<50m²) runs beneath the railway in the southeast corner of the site. This is a concrete man-made channel, with vertical sides, which is subjected to occasional inundation. At the time of the survey, it only had a limited amount of water within it which appeared to be of relatively poor quality. Much of this habitat is completely shaded where it runs beneath the railway. This habitat contains a water channel of approximately 1m wide and 50cm deep which likely dries up for some of the year and especially during drier summers. Species within it are predominantly restricted just to common reed.

7.6 Spoil

- 7.6.1 Several large spoil heaps occur in the eastern section of the Application Site, and these primarily comprise the storage of raw materials including pumice. These habitats are actively disturbed as part of an active works yard, with a rotation of products and frequent vehicle movement and transportation of materials at the time of the survey. This habitat is of no significant ecological value and occurs on hard standing.

7.7 Amenity Grassland

- 7.7.1 A small amount of road verge in the northeast corner of the site is dominated by amenity grassland with scattered trees. This habitat comprises short, lush grass that is cut regularly throughout the growing season. It does not appear to be subjected to any regular management other than cutting and appears to be well drained with eutrophic, light soils.

- 7.7.2 Species composition is relatively poor and is dominated by prickly sow thistle *Sonchus asper*, cocksfoot, creeping buttercup *Ranunculus repens*, dandelion *Taxacarium*

officinale, perennial ryegrass, annual meadow grass *Poa annua*, white clover *Trifolium repens*, great plantain *Plantago major*, common storks-bill *Erodium cicutarium*, common mallow *Malva neglecta*, ribwort plantain *Plantago lanceolata*, red fescue *Festuca rubra*, creeping cinquefoil *Potentilla reptans*, daisy *Bellis perennis*, birds-foot trefoil *Lotus corniculatus*, creeping thistle, common knotgrass *Polygonum aviculare* and cats-ear *Hypochaeris radicata*.

7.8 Ephemeral/short perennial

7.8.1 Large expanses of the Application Site comprise a sparse open covering of pioneer vegetation community's less than 5 years old. These have formed on top of a mixture of crushed stone, tarmac, chalk, railway ballast and other similar materials. This has all been compacted and landscaped to create large car parking areas for imported vehicles. Vegetation growth is sparse and likely covers less than 20% of the overall area. This area is relatively well drained although undulations are likely to hold small amounts of shallow water over winter.

7.8.2 Species composition within this habitat includes evening primrose *Oenothera biennis*, wall speedwell *Veronica arvensis*, rats tail fescue *Vulpia myuros*, prickly lettuce *Lactuca serriola*, wall lettuce *Lactuca muralis*, yellow-wort *Blackstonia perfoliata*, narrow-leaved ragwort *Senecio inaequidens*, colts-foot *Tussilago farfara*, bristly ox-tongue *Helminthotheca echioides*, camomile *Matricaria chamomilla*, squirrel-tail fescue *Vulpia bromoides*, scented mayweed *Matricaria chamomilla*, pineapple mayweed *Matricaria discoidea*, field poppy *Papaver rhoeas*, spear-leaved orache *Atriplex patula*, common cats-ear, wall barley *Hordeum murinum*, annual beard grass *Polypogon monspeliensis*, perforated St John's-wort *Hypericum perforatum*, American willowherb *Epilobium ciliatum*, lesser trefoil *Trifolium dubium*, weld *Reseda luteola*, red valerian *Centranthus ruber*, opium poppy *Papaver somniferum*, common centaury *Centaureum erythraea*, selfheal *Prunella vulgaris*, blue fleabane *Erigeron acer*, giant mullein *Verbascum thapsus*, biting stonecrop *Sedum acre*, scarlet pimpernel *Anagallis arvensis*, scentless mayweed *Tripleurospermum inodorum*, hard rush *Juncus inflexus* and pendulous sedge *Carex pendula*.

7.9 Fence

7.9.1 A variety of metal security fencing types exist around the boundaries of the Application Site. These have been installed to restrict pedestrian access to the site and are of negligible ecological significance, other than they may limit access to the larger vertebrate species like roe deer *Capreolus capreolus*.

7.10 Buildings

7.10.1 The following buildings are present within the Application Site:

- a. **Water tower** – comprises a steel structure with a steel supporting framework. The water tower is still in use and is of negligible ecological value and based on current information, there are no plans to remove it.

7.11 Bare ground

7.11.1 Bare ground habitats are frequent and diverse within the Application Site and consist of pathways, roads, paving and parking areas. They predominantly comprise of concrete, crushed rubble and tarmac.

7.12

The following species of fauna were recorded during the field survey:

- Blackbird *Turdus merula*
- Song thrush *Turdus philomelos*
- Robin *Erithacus rubecula*
- Wren *Troglodytes troglodytes*
- Whitethroat *Sylvia communis*
- Chiffchaff *Phylloscopus collybita*
- Starling *Sturnus vulgaris*
- House sparrow *Passer domesticus*
- Goldfinch *Carduelis carduelis*
- Linnet *Linaria cannabina*
- Swallow *Hirundo rustica*
- House martin *Delichon urbicum*
- Woodpigeon *Columba palumbus*
- Feral pigeon *Columba livia*
- Swift *Apus apus*
- Pied wagtail *Motacilla alba*
- Dunnock *Prunella modularis*
- Magpie *Pica pica*
- Black headed gull *Chroicocephalus ridibundus*
- Herring gull *Larus argentatus*
- Lesser black-backed gull *Larus fuscus*
- Buzzard *Buteo buteo*
- Marsh harrier *Circus aeruginosus*
- Kestrel *Falco tinnunculus*
- Sparrowhawk *Accipiter nisus*
- Rabbit *Oryctolagus cuniculus*
- Small tortoiseshell *Aglais urticae*
- Small white *Pieris rapae*
- Meadow brown *Maniola jurtina*
- Ringlet *Aphantopus hyperantus*
- Cinnabar *Tyria jacobaeae*

8.0 SPECIES APPRAISAL

8.1 The habitats within and surrounding the Application Site are potentially important, and the development area may impact upon mobile species. Consequently, the field 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 (Amendment) (EU Exit) Regulations 2019.

8.2.1.2 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, 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 external search for actual roosting bats and their sign. 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 **Buildings**
- 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 **Water tower** - no roosting opportunities were present within the fabric of the building due to the following:
- The metal frame and tank were tightfitting.
 - The single skin design ensures that there are no gaps or cavities within the structure.
 - There were no obvious access points into the water tank.
 - No evidence of bats was observed.
 - The building has been assessed as having a **NEGLIGIBLE SUITABILITY** to support bats.
- 8.2.3.3 No potential roost sites exist within the studied trees or building on site, predominantly due to a lack of suitable roosting cavities within the water tower and the immature age and form of the trees. The impact to roosting bats within trees and buildings is considered to be **neutral**.
- 8.2.4 **Site Status Assessment**
- 8.2.4.1 No potential roost sites exist within the Application Site, predominantly due to an absence of suitable roosting features in buildings or trees. The wider area supports an abundance of more suitable woodland and wetland habitats, which offer alternate foraging and commuting habitat for bats. The site is exposed and dominated by open bare ground habitats or smaller patches of grassland in an exposed industrialised and estuarine location, the Application Site is sub optimum for foraging and commuting bats and is not considered integral to the favourable population status of local bat populations.
- 8.2.4.2 **Wold Ecology does not recommend any further activity surveys for bats.**

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 (Amendment) (EU Exit) Regulations 2019. 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 (250 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 field survey. In addition, aerial photographs, maps and physical searches of the surrounding landscape identified 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.
- 8.3.2.4 The likely presence of great crested newts in ponds can be predicted by examining aquatic habitat features such as the presence of fish, waterfowl, and water quality. This data is used to calculate a habitat suitability index (Oldham *et. al.* 2000). The HSI is represented by a number from 0 to 1, the higher the number the more likely the pond is to be occupied by great crested newt. The HSI system is not sufficiently precise to allow the conclusion that any high score will support great crested newts, or that a pond with a low score will not do so.
- 8.3.2.5 Access was only granted within the Application Site and land owned by the client; neighbouring land was only studied from vantage points, maps and aerial photography and it is possible that some ponds may not have been recorded.
- 8.3.3 Field Survey Results
- 8.3.3.1 One pond was identified within Application Site boundaries, with 6 industrial lagoons identified in the field and through the use of aerial photographs and OS maps.
- 8.3.3.2 The industrial lagoons are considered unsuitable for great crested newts for the following reasons :
- They comprise steep concrete structures with vertical banks with raised edges making it difficult for great crested newts to access.
 - They are in industrial use and are subjected to fluctuations in water levels, and inputs of chemicals.
 - Water quality is poor and influenced by chemicals and salinity.
 - The area appears to show moderately high levels of salinity as seen by certain species of upper saltmarsh vegetation within other parts of the site like annual beard grass and spear-leaved orache.
 - The surrounding habitat around these lagoons offers no opportunity for great crested newts and is dominated by hard standing and buildings with regular vehicular disturbance.
- 8.3.3.3 The pond identified (Pond 1) is a sump which runs beneath the railway and is described in 7.5. Consequently, the only pond included in the assessment is (see figure 4):
- Pond 1 (P1) – NGR TA 20220 14962
- 8.3.4 Habitat suitability index
- 8.3.4.1 A habitat assessment was completed on the proposed development area and surrounding land (250 metres radius) accessible at the time of the surveys. The assessment combined Phase 1 Habitat Survey (JNCC 1990), 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.

8.3.4.2 Habitat Suitability Index (HSI) evaluation.

8.3.4.2.1 The likely presence of great crested newts in ponds can be predicted by examining aquatic habitat features such as the presence of fish, waterfowl and water quality. This data is used to calculate a habitat suitability index (Oldham et al. 2000). The HSI is represented by a number from 0 to 1, the higher the number the more likely the pond is to be occupied by great crested newt.

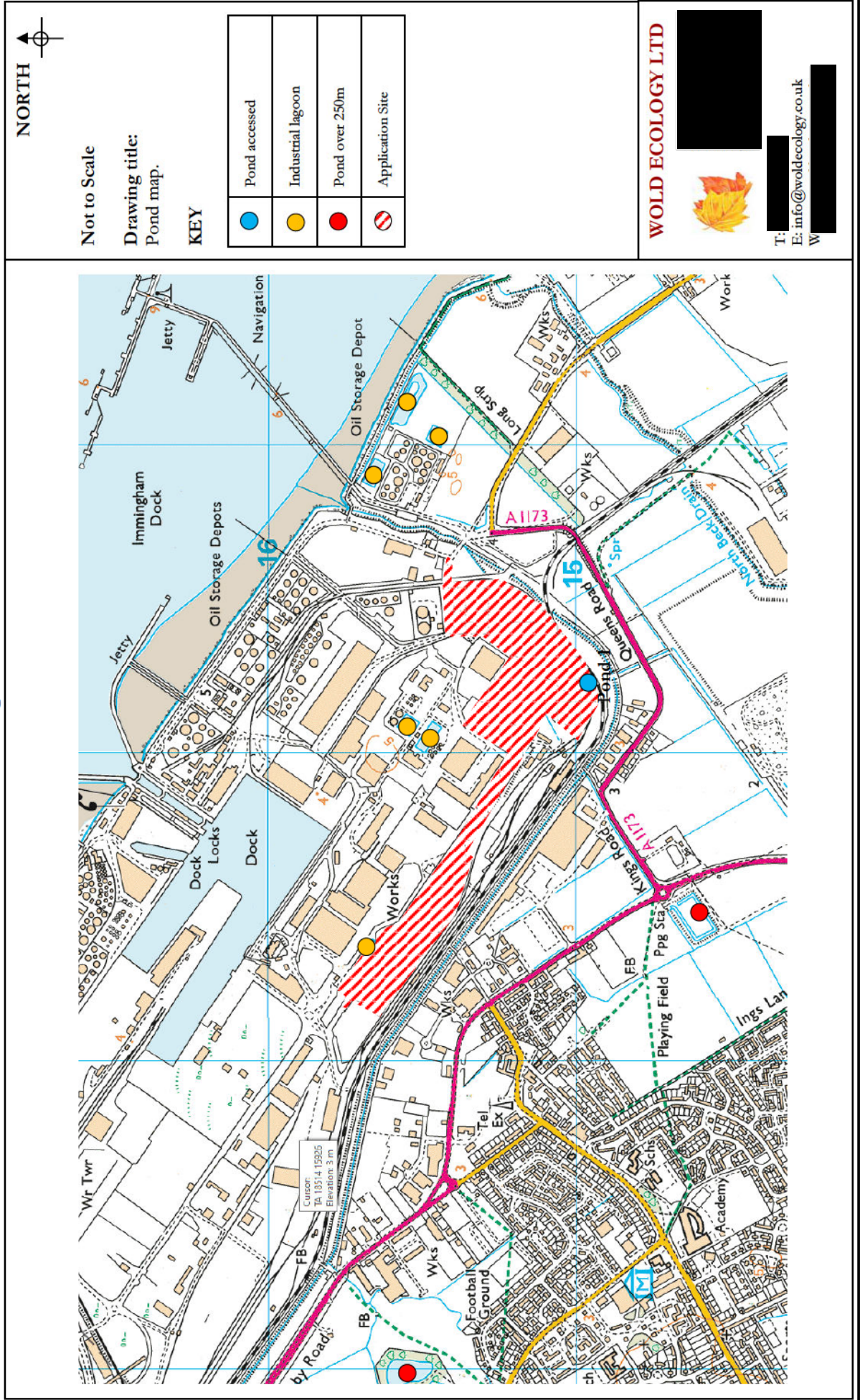
8.3.4.2.2 The HSI for great crested newts is a measure of habitat suitability but is not a substitute for newt surveys. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores (The Herpetological Conservation Trust, 2008).

8.3.4.2.3 Some of the field scores are categorical, some are numerical. The numerical field scores are converted to SI scores by reading off the values from graphs produced by Oldham et al. (2000). Full details of the HSI rationale and guidance can be obtained from the Herpetological Conservation Trust and is summarised in the appendices.

8.3.4.2.4 HSI Scoring

Pond	HSI Score (tenth root of total)	Suitability
1	0.58	Below Average
Full details of the HSI scoring can be viewed in Appendix 7.		

Figure 4.



8.3.5 Site Status Assessment

8.3.5.1 The HSI system is not sufficiently precise to allow the conclusion that any particular high score will support great crested newts, or that a pond with a low score will not do so. However, the combination of a Below Average score along with the following factors reduce the likelihood of great crested newts being present within Pond 1:

- The steep vertical banks make sections of the pond difficult for great crested newts enter and exit.
- This pond is likely to be subjected to fluctuations in water levels, with complete desiccation occurring during drier conditions.
- A large part of the pond is completely shaded by the overhead railway line, lowering its water temperature, which reduces its value to breeding great crested newts.
- Water quality is likely to be influenced by chemicals and salinity from adjacent estuarine, industrialised areas and the adjacent railway line.
- This area appears to show moderately high levels of salinity as seen by certain species of upper saltmarsh vegetation within other parts of the site like annual beard grass and spear-leaved orache.
- No records of great crested newt exist within 1km of the Application Site.
- There is no current knowledge of great crested newts within the Application Site.
- No other suitable ponds exist within the Application Site.
- No suitable ponds were observed within 250m of the Application Site.
- The Application Site primarily comprises open bare ground habitats which inhibits dispersal by reducing areas of shelter, foraging grounds and leaving amphibians open to predation and desiccation. Consequently, the Application Site is poor quality terrestrial habitat for amphibians.
- Surrounding road networks, walls, buildings and curbs limit great crested newt dispersal to and from the site in the wider area.

8.3.5.2 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.

8.3.5.3 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.”

8.3.5.4 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.

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

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.

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

8.4.4 Field Survey Methodology

8.4.4.1 All bird species recorded by either sight, song or call were noted, in addition particular attention was given to key species of conservation concern and which habitat within the Application Site they were recorded using. All active (and disused) nests, territorial, breeding, and foraging birds were recorded in further detail to analyse how breeding birds use the Application Site. In winter foraging birds, roosting birds and large aggregations of birds using a specific habitat are noted. In addition, the habitat is assessed for its value to specific species, so that the likelihood of breeding can be analysed.

8.4.4.2 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*.

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

8.4.5 Field Survey Results

8.4.5.1 Schedule 1 Listed Birds

8.4.5.1.1 Summary of the Application Site’s suitability to support schedule 1 birds:

Species recorded within 2km	Suitability of Application Site
Peregrine <i>Falco peregrinus</i>	The only suitable structure on site is the water tower, no evidence of peregrine was noted and based on current information this building will not be removed or disturbed as part of the proposed development. If works are to occur within 80m of this building between late February and July, it should be checked for presence of breeding birds.
Little-ringed plover <i>Charadrius dubius</i>	Opportunities for breeding little ringed plover are abundant throughout the open habitats on site. These are regularly used for car storage and therefore unsuitable habitat; however, the ephemeral breeding biology of this species means if suitable open spaces become available, they could attempt to breed here. If works are to occur between late March and July, it should be checked for presence of breeding birds.

8.4.5.2 None-schedule 1 birds - breeding birds

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

8.4.5.3 None-schedule 1 birds - wintering birds

8.4.5.3.1 The Application Site is not considered to be of significant value to wintering waders and wildfowl associated with the River Humber and Humber Estuary; this is due to the following reasons:

- The Application Site is relatively enclosed with tree cover and buildings, reducing sight lines and increasing the risk of predation. Waders prefer open landscapes with wide visibility.
- The shallow rocky/rubble soils are unlikely to be of value to foraging birds as they are difficult to penetrate and are unlikely to have high subterranean invertebrate communities of importance to feeding waders. Soils on site do not have a high organic content.
- Enclosure/lack of clear sight lines reduce its value to waders, gulls and wildfowl roosting at high tide.
- The lack of mature grassland and shallow soil reduces the likelihood to support high subterranean invertebrate densities and this reduces the value of the Application site for species like curlew, redshank and common snipe.
- The absence of wetland habitat and permanent water reduces the sites value to wildfowl. Additionally, the sparsely vegetated terrestrial habitats are of poor value to foraging wildfowl like wigeon.
- The site is not considered to have extensive food sources for wintering passerines, owing to the botanical composition of the site and current land use.

- Waders typically roost in areas like rocky shores, flooded fields, dunes, salt-marsh, fields, sand-bars and mud flat; none of these habitats are present within the Application Site.
- There are no habitats on site that are optimum for species which often roost in shallow water e.g. godwits and greenshank.

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

8.4.7 Biodiversity Gains and Recommendations

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

8.4.7.2 Any 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.

8.5 **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 Whilst no evidence of badgers was noted some sections of scrub were impenetrable at the time of the survey. Works within these areas should proceed with caution, if any badger setts are discovered works must stop instantly and a qualified ecologist will be sought to provide a way forward which may include applying for a Natural England licence to disturb the sett.
- 8.5.3.3 **It is recommended that a walkover survey is undertaken during winter when leaf cover is reduced, and badger activity is more visible.**
- 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 (Amendment) (EU Exit) Regulations 2019. 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 did not identify any reptile records within 2km of the Application Site. Reptiles are moderately localised in North East Lincolnshire.

8.6.3.2 The Application Site is considered unlikely to support reptiles for the following reasons:

- No records of reptiles occur within 2km of the Application site.
- Most of the Application Site is open exposed habitat of negligible value to reptiles. The open nature of large sections of the site leaves reptiles open to predation from key predators including crows, kestrels, hedgehogs, domestic cats, and foxes.
- Reptiles are typically not very wide-ranging species, instead staying in optimum habitat. Such optimum habitat is very restricted 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 poor value of the site to amphibians (grass snake's chief food source) further limit the sites importance to grass snakes.
- Suitability for reptiles is limited to small patches of homogenous habitat which does not provide habitat complexity favoured by these species.

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 casualties.
- 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 scrub bases 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 and 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 [REDACTED]

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
Coniferous Woodland	Upland Birchwoods	N
Acid Grassland	Native Pine Woodlands	N
Calcareous Grassland	Lowland Dry Acid Grassland	N
	Lowland Calcareous Grassland	N
Neutral Grassland	Upland Calcareous Grassland	N
	Lowland Meadows	N
Improved Grassland	Upland Hay Meadows	N
	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.

9.3 Open Mosaic Habitats on Previously Developed Land

9.3.1 The habitat is concentrated in urban, urban fringe and large-scale former industrial landscapes, especially in the lowlands, though more isolated examples can be found on previously developed land in more remote rural areas.

9.3.2 These are generally primary successions, and as such unusual in the British landscape, especially the lowlands. The vegetation can have similarities to early/pioneer communities (particularly grasslands) on more ‘natural’ substrates but, due to the edaphic conditions, the habitat can often persist (remaining relatively stable) for decades without active management (intervention). Stands of vegetation commonly comprise small patches and may vary over relatively small areas, reflecting small-scale variation in substrate and topography.

9.3.3 The definition and criteria for field recognition of Open Mosaic Habitats on Previously Developed Land comes from a 2009 Defra research project by Riding *et al.* Each of these criteria must be met for a site to qualify.

Criterion	Achieved
1. The area of open mosaic habitat is at least 0.25 ha in size.	✓

2. Known history of disturbance at the site or evidence that soil has been removed or severely modified by previous use(s) of the site. Extraneous materials/substrates such as industrial spoil may have been added.	✓ Crushed Rubble
3. The site contains some vegetation. This will comprise early successional communities consisting mainly of stress-tolerant species (e.g. indicative of low nutrient status or drought). Early successional communities are composed of	✓
(a) annuals, or	✓
(b) mosses/liverworts, or	✓
(c) lichens, or	✗
(d) ruderals, or	✗
(e) inundation species, or	✗
(f) open grassland, or	✓
(g) flower-rich grassland, or	✗
(h) heathland.	✗
4. The site contains un-vegetated, loose bare substrate and pools may be present.	✓
5. The site shows spatial variation, forming a mosaic of one or more of the early successional communities (a)–(h) above (criterion 3) plus bare substrate, within 0.25 ha.	✗

9.3.4 In addition to the non-compliance with some of the criterion above, the Application Site is not considered to be Open Mosaic Habitats on Previously Developed Land:

- The buildings on site were demolished within the previous 8 years and the site has a reduced ecological value due to its immaturity.
- The habitat has limited nectar resources for invertebrates due to the abundance of fine-leaved grasses overlaying crushed concrete/rubble.
- Absence of niche habitats to support invertebrates and the nectar resource is poor.
- The vegetation present is not diverse enough to provide a season long food resource for pollinating invertebrates.
- The site in its current form is only likely to support common and widespread inverts.

9.3.5 **Consequently, the Application Site fails to meet all the criteria for achieving the UK BAP standard for Open Mosaic Habitats on Previously Developed Land. However, it is possible that as the habitat develops it will eventually meet the OMH criteria over the next 5-15 years.**

9.4 Management planning

9.4.1 It is recommended that a detailed Ecological Construction Method Statement and an Ecological Enhancement Management Plan is produced in order to protect, maintain and enhance the sites ecological value.

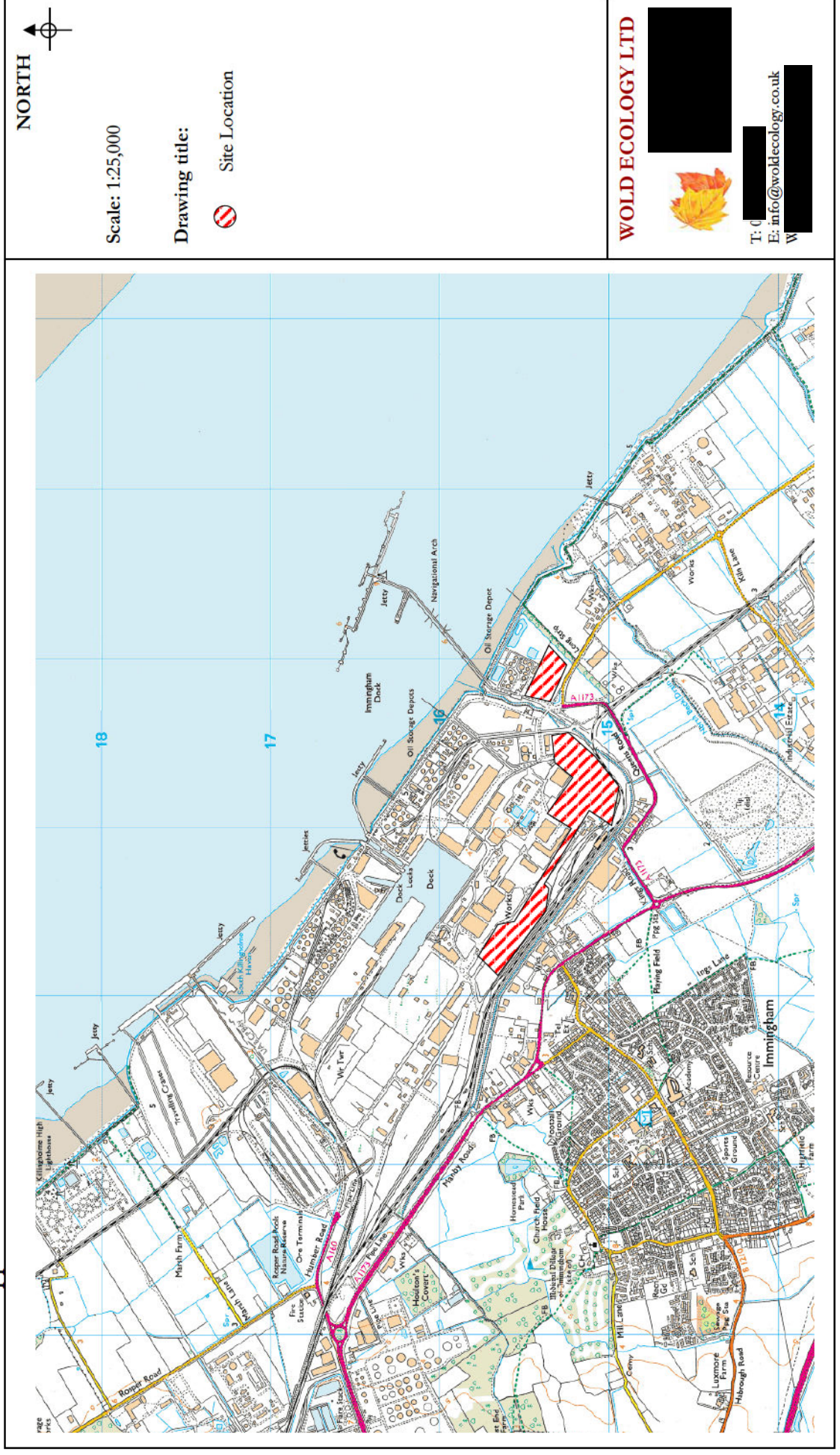
- Andrews, H., *et al*, (2013). *Bat Tree Habitat Key*. AEcol, Bridgewater.
- Arntzen, J.W. & Teunis, S.F.M (1993). *A six-year study on the population dynamics of the crested newt (Triturus cristatus) following the colonisation of a newly created pond*. Herpetological Journal 3: 99-110.
- Baker, J., 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) *Bird 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.




11.0 APPENDICES

11.1 Appendix 1



Scale: 1:25,000

Drawing title:

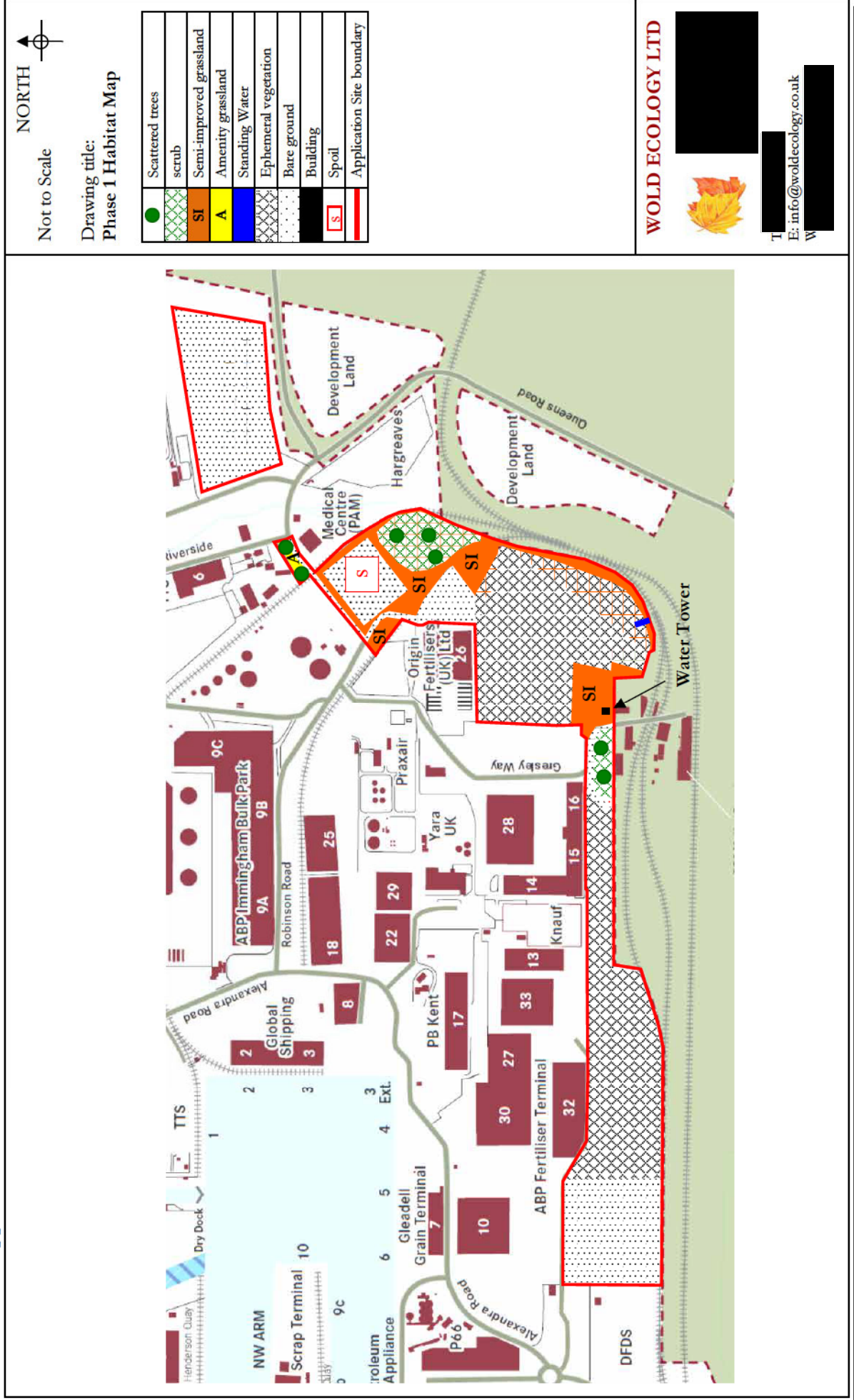
 Site Location

WOLD ECOLOGY LTD



T: [REDACTED]
 E: info@woldecology.co.uk
 W: [REDACTED]

11.2 Appendix 2



11.3 Appendix 3 – Summary of desktop study

Organisation.	Response Summary.	Date.
Natural England.	Local designations.	July 2021
Natural England.	UKBAP species and habitats within 2 km.	July 2021
Lincolnshire Ecological Records Centre	Species lists within 2 km.	July 2021
www.magic.gov.uk	European Protected species licenses within 2km.	July 2021
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 <i>Vipera berus</i>			✓*				✓		
Common lizard <i>Zootoca vivipara</i>			✓*				✓		
Grass snake <i>Natrix helvetica</i>			✓*				✓		
Slow worm <i>Anguis fragilis</i>			✓*				✓		
Smooth snake <i>Coronella austriaca</i>			✓	✓	✓	✓	✓	✓	
Sand lizard <i>Lacerta agilis</i>			✓	✓	✓	✓	✓	✓	
Great Crested Newt <i>Triturus cristatus</i>			✓	✓	✓	✓	✓	✓	
Natterjack Toad <i>Epidalea calamita</i>			✓	✓	✓	✓	✓	✓	
All UK bats <i>Chiroptera</i>			✓	✓	✓	✓	✓	✓	
Water vole <i>Arvicola amphibious</i>			✓	✓	✓	✓	✓		
Otter <i>Lutra lutra</i>			✓	✓	✓	✓	✓	✓	
Dormouse <i>Muscardinus avellanarius</i>			✓	✓	✓	✓	✓	✓	
Badger <i>Meles meles</i>									✓
Red Squirrel <i>Sciurus vulgaris</i>			✓	✓	✓	✓	✓		
Pine Marten <i>Martes martes</i>			✓	✓	✓	✓	✓		
Scottish Wildcat <i>Felis silvestris</i>			✓	✓	✓	✓	✓	✓	
White-clawed crayfish <i>Austropotamobius pallipes</i>			✓				✓		
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 of Habitats and Species (Amendment) (EU Exit) Regulations 2019

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 offence 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 and Species (Amendment) (EU Exit) Regulations 2019. These Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

A person who—

- (a) deliberately captures, injures or kills any wild animal of a European protected species,
- (b) deliberately disturbs wild animals of any such species,
- (c) deliberately takes or destroys the eggs of such an animal, or

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

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

- (a) to impair their ability—
- (i) to survive, to breed or reproduce, or to rear or nurture their young, or
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- (b) to affect significantly the local distribution or abundance of the species to which they belong.

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

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

Protection of Badgers Act 1992 (PBA)

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

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

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

The Protection of Badgers Act 1992 allows for licences to be issued for a number of purposes, including development under the Town and Country Planning Act 1990 and to prevent serious damage to property. Licences to interfere with badger

setts or disturb badgers for development are issued by the Government's statutory nature conservation agencies, e.g. Natural England.

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 seabird surveys on the North Yorkshire coastline at an internationally important seabird colony on the behalf of 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 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

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.

11.7 Appendix 7 - HSI Scoring.

11.7.1 The HSI for great crested newts is a measure of habitat suitability but is not a substitute for newt surveys. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores (The Herpetological Conservation Trust, 2008).

11.7.2 The HSI is a geometric mean of ten suitability indices (SI):

$$\text{HSI} = (\text{SI1} \times \text{SI2} \times \text{SI3} \times \text{SI4} \times \text{SI5} \times \text{SI6} \times \text{SI7} \times \text{SI8} \times \text{SI9} \times \text{SI10})^{1/10}$$

- The ten suitability indices are scored for a pond, in the field and from map work.
- The ten field scores are then converted to SI scores, on a scale from 0.01 to 1 (0.01 instead of 0, because multiplying by 0 reduces all other SI scores to 0).
- The ten SI scores are then multiplied together.
- The tenth root of this number is then calculated $(X)^{1/10}$

11.7.3 The field scores were collected by Dan Lombard. Some of the field scores are categorical, some are numerical. The numerical field scores are converted to SI scores by reading off the values from graphs produced by Oldham *et al.* (2000). Full details of the HSI rationale and guidance can be obtained from the Herpetological Conservation Trust.

11.7.4 HSI Results

Geographical location – SI 1

All ponds are located in Zone A

Pond 1 = 1.0

Pond area – SI 2

The approximate size of the pond is shown in brackets.

Pond 1 (50m²) = 0.05

Pond drying – SI 3

Pond 1 (Sometimes Dries) = 0.5

Water quality – SI 4

Pond 1 (Moderate) = 0.67

Shade – SI 5

Pond 1 (60%) = 1.0

Fowl – SI 6

Pond 1 (Absent) = 1.0

Fish – SI 7

Pond 1 (Absent) = 1.0

Ponds within 1 km – SI 8

Pond 1 (4) = 0.5

Terrestrial habitat – SI 9

Pond 1 (Good) = 1.0

Macrophytes – **SI 10**
 Pond 1 (20%) = 0.5

Summary of HSI scoring.											
SI	1	2	3	4	5	6	7	8	9	10	Total
Pond 1	1.0	0.05	0.5	0.67	1.0	1.0	1.0	0.5	1.0	0.5	0.0041875

11.7.5 Each SI score is multiplied together to give a total. The tenth root of this number is then calculated, consequently, the calculated HSI for a pond should score between 0 and 1.