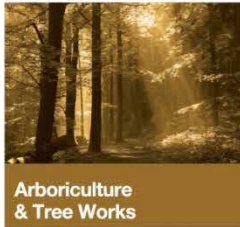




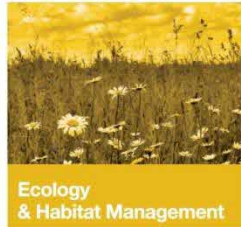
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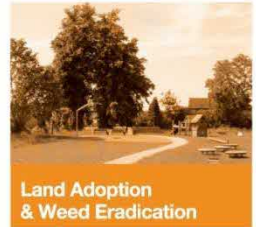
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Planning



Arboriculture
& Tree Works



Ecology
& Habitat Management



Land Adoption
& Weed Eradication

James Blake Associates Ltd

Phase 1 Habitat Survey of Relief Road, Haverhill, Suffolk

on behalf of

Persimmon Homes (Essex)

February 2018

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Over 30 Years of Service, Value and Innovation

The Black Barn, Hall Road, Lavenham, Suffolk CO10 9QX
tel: **01787 248216** fax: **01787 247264** email: **jamesblake@jba-landmarc.com**

Chairman: James Blake BA (Hons) Dip LA (Hons) CMLI

Company Secretary: Louise Blake BSc PGCE


Directors: Elzbieta Zebrowska MSc Eng LArch MScEnvSc CMLI

Kevin Slezacek DipArb MArborA

Associate Directors: Mary Power BSc MSc MCIEEM ; Vivienne Jackson ; Jenny Beck BA (Hons)

www.jba-landmarc.com

Registration no. 8169866 VAT no. 512 4127 91

Revision	Purpose	Originated	Checked	Authorised	Date
		SR	HW	CA	February 2018
A	Client comments	GP	CA	JBA	February 2018
Job Number: JBA 17/364 MD		 <p>JAMES BLAKE ASSOCIATES</p>			
		Title: Phase 1 Habitat Survey of Relief Road, Haverhill in Suffolk			

Disclaimer

James Blake Associates Ltd have made every effort to meet the client’s brief. However, no survey ensures complete and absolute assessment of the changeable natural environment. The findings in this report were based on evidence from thorough survey: It is important to remember that evidence can be limited, hard to detect or concealed by site use and disturbance. When it is stated that no evidence was found or was evident at that point in time, it does not mean that species are not present or could not be present at a later date: The survey was required because habitats are suitable for a given protected species, and such species could colonise areas following completion of the survey.

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Non-technical Summary

Site:	Relief Road, Haverhill in Suffolk
Grid Reference (from the centre of the site)	TL 670 468
Report Commissioned by:	Persimmon Homes (Essex)
Date of Survey:	4 th January 2018

Considerations	Description	Timings and potential impacts
Statutory and non-statutory sites within 2km:	One Local Nature Reserve and nine County Wildlife Sites	None in relation to the proposed relief road. Increased number of dog walkers and horses, particularly to Ann Suckling's Way CWS, due to additional housing from the larger development.
SPA, SAC and Ramsar sites within 7km:	There are no SPAs, SACs or Ramsar sites within 7km of the site	N/A
Phase 2 surveys:	Reptile Survey	April to September
	Great crested newt survey	Mid-March to Mid-June with half of visits between mid-April and mid-May
	Badger survey	Any time of year (ideally March, April, or September)
	Dormouse survey	April to November
	Bat activity survey (to assess commuting and foraging)	April to September
	Breeding bird survey	April to July
	Water vole survey	April to September

	Sulphur clover survey	June and July
Precautionary Measures:	Removal of field vegetation, trees, scrub and hedgerows	Between October and February so it is outside of the nesting bird season (March to September) or following a breeding bird survey if this is not possible. See section below with regards to trees and hedgerows
	Removal of hedgerows and trees for Phase 1a and Phase 1b under ecological supervision	Stage 1; cut hedge to 30cm between December and February. Stage 2; cut hedge from 30cm to root between May and October
	Covering of excavations and appropriate chemical storage	To be detailed and secured in CEMP
	Lighting minimization scheme	See Section 4 for details
Habitat types:	Semi-improved grassland, scrub, hedgerows, tall ruderal vegetation, arable fields, boundary trees, woodland, dry and wet ditches.	

1 Introduction

Background

- 1.1 James Blake Associates Ltd were commissioned by Persimmon Homes (Essex) to undertake a Phase 1 Habitat Survey and Protected Species Scoping Survey of the Relief Road, Haverhill in Suffolk (grid ref TL 670 468, taken from the centre of the site).
- 1.2 The assessment was required to inform potential further ecology surveys and mitigation works associated with the construction of the north west relief road.
- 1.3 For the purposes of this report, protected species are taken to be those which are protected under European Legislation (Conservation of Habitats and Species Regulations 2010, as amended) and UK legislation (Wildlife and Countryside Act 1981; Protection of Badgers Act 1992); and species and habitats of principal importance which are listed in Section 41 of the NERC Act (2006).
- 1.4 There is a general biodiversity duty in the National Planning Policy Framework (NPPF) 2012, placing responsibility on Local Planning Authorities to aim to conserve, enhance and encourage biodiversity in and around developments. Section 40 of the NERC Act requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Biodiversity, as covered by the Section 40 duty, includes all biodiversity, not just the habitats and species of principal importance. However, there is an expectation that public bodies would refer to the S41 list when complying with the Section 40 duty.

Site Description

- 1.5 The site was located to the north west of Haverhill Road (A143), north of Haverhill town in Suffolk. Arable fields bordered the site with residential housing to the south. Norney Plantation County Wildlife Site (CWS) an area of ancient replanted woodland was approximately 65m north of the site boundary. The wider landscape included mainly arable fields with scattered woodland. The River Stour lay approximately 1.8km east of the site, and the Stour Brook lay approximately 300m south, along with a series of drainage ditches (see Figure 1 below).
- 1.6 The site itself was a series of arable and tall ruderal fields with managed hedgerows, scattered boundary trees, wet and dry ditches and an area of deciduous woodland to

the south east of the site. Adjacent to the northern and southern boundaries was arable and tall ruderal fields with the eastern boundary adjacent to Haverhill Road (A143). The western boundary connected to Hales Barn Road roundabout. Ann Suckling's Way CWS was adjacent to the northern boundary of the site.

Figure 1: Site location



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Aims and objectives

The aim of the survey was to:


- Identify the presence/likely absence, of any protected or notable species or habitats on, or adjacent to, the site;
- assess the potential impact of the proposed works on any protected or notable species and/or habitats present including nature conservation sites on, or adjacent to, the site;
- make recommendations for further surveys on protected species that are likely or known to be present on the site;
- provide recommendation for appropriate mitigation, compensation or avoidance measures following the protected species surveys (if required) and make suggestions to enhance the site for wildlife post-development.

2 Methods

Desk study

- 2.1 A 2km radius search for statutory designated sites, excluding Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites, either on the proposed development site or in the surrounding area, was conducted using “MAGIC”, the Multi-Agency Geographic Information system for the Countryside.
- 2.2 A 7km search for SACs, SPAs and Ramsar sites was also conducted using MAGIC.
- 2.3 The Suffolk Biodiversity Information Service (SBIS) was consulted for records of non-statutory sites and protected and rare species within a 2km search radius (SBIS data provided on the 11th January 2018).
- 2.4 The site is covered by the Local Biodiversity Action Plan (LBAP) for Suffolk (www.suffolkbis.org.uk).

Phase 1 Habitat Survey

- 2.5 The survey was undertaken by Crystal Acquaviva BSc (Hons) MSc MCIEEM (great crested newt class licence WML-CL08 and bat licence class WML-CL19/WML-CL20) and Samantha Rigg BSc (Hons) AMRSB (great crested newt class licence WML-CL08), on the 4th January 2018. During the survey, the temperature was 7°C, there was a light breeze (Beaufort scale 1) at the start of the survey but strong winds were present during the end of the survey (Beaufort scale 5), 100% cloud cover and good visibility.
- 2.6 The survey methodology followed JNCC (Joint Nature Conservation Committee) Guidelines (JNCC, 2010) and included mapping habitat types and identifying all plant species observed on the site, including Wildlife and Countryside Act Schedule 9 invasive plant species such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*).
- 2.7 The site was also assessed for signs and evidence of protected, principally important and rare species in accordance with approved guidelines, as follows:
- 2.8 **Amphibians:** Where accessible, known ponds within 500m of the site (unless ecologically separated from the site by significant barriers, such as major roads or rivers) were assessed for potential to support breeding protected amphibians, such as 
- 2.9 **Bats:** Trees within the site boundary, and adjacent to the site boundary, were surveyed externally, from the ground, for their potential to support roosting bats,

under the following criteria, taken from recommendations made by the Bat Conservation Trust in the ‘Bat Surveys for Professional Ecologists Good Practice Guidelines’ (BCT, 2016).

Table 1: Bat survey protocol for trees (potential bat roosting features were identified in order to categorise trees, as below):

Bat Roost Potential	Field signs
Roost Confirmed	Confirmed bat roost in tree: field evidence of the past or current presence of bats, e.g. droppings, staining.
High roost potential	Splits or cracks in major limbs which develop upwards, smooth surface or flies around entry point, medium to dense ivy-covering particularly on mature trees, woodpecker/rot holes, hollow stem or limb, significant lifting bark, snagged branches, artificial bird or bat boxes, tightly forked branch unions, hole between roots leading into a hollow stem, dense epicormic growth, deadwood in canopy or stem, Ancient or over mature trees where the canopy cannot be fully inspected from the ground.
Medium roost potential	Splits in branches, low - medium ivy-covering on trees in healthy condition, small cavities and small areas of deadwood in canopy or stem.
Low roost potential	Splits in minor branches, sparse ivy, and limited loose bark.
No roost potential	Trees with good visibility to the top of the canopy (particularly young and semi-mature trees) not supporting any of the above features or trees with a negligible potential to support bat roosts (may display minor features but considered highly unlikely to be suitable for bats).

- 2.10 **Dormice:** A visual survey for the presence of suitable habitat (woodland/suitable hedges with good under-storey/shrub layer and a range of food plant species, such as hazel, bramble and honeysuckle) was carried out, to assess if dormice were likely to be present.
- 2.11 **Reptiles:** A visual survey for the presence of suitable habitat was carried out according [REDACTED]
- 2.12 **Otters and water voles:** A visual survey for the presence of field signs was carried out to assess if water voles and otters were likely to be present. The survey was based on the methods described within the ‘Water Vole Conservation Handbook, 3rd Edition’ (Strachan, Moorhouse and Gelling 2011) and Essex Otter Survey, 2009-2010 (Darren Tansley 2011).
- 2.13 **Invertebrates:** The site was scoped for significant rotting deadwood, and high quality

aquatic or other habitats, which could be used by significant assemblages of invertebrates, or by any of the invertebrates highlighted in the data search.

2.14 **Flora and habitats:** All habitats and plant species that were identifiable at the time of the survey were recorded.

2.15



2.16 **Birds:** A visual survey of bird activity and suitable nesting habitat was carried out, to determine if any areas would be suitable for WCA Schedule 1 birds, Birds of Conservation Concern or other common and widespread nesting birds.

2.17 **Adjacent Habitat:** Habitats close to the site were identified, using aerial maps and field observation, so that the ecological impact of the proposed works on the wider landscape could be assessed.

3 Results

Desk Study

Statutory Nature Conservation Sites within 2km of the site and Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites within 7km

- 3.1 There was one statutory designated sites within 2km of the site, a Local Nature Reserves (LNR). This is described in Table 2 and shown in Figure 2.
- 3.2 In addition, a 7km radius search was carried out for SPAs, SACs and Ramsar sites. No SPAs, SACs or Ramsar sites were found within the search area.

Non-Statutory Nature Conservation Sites

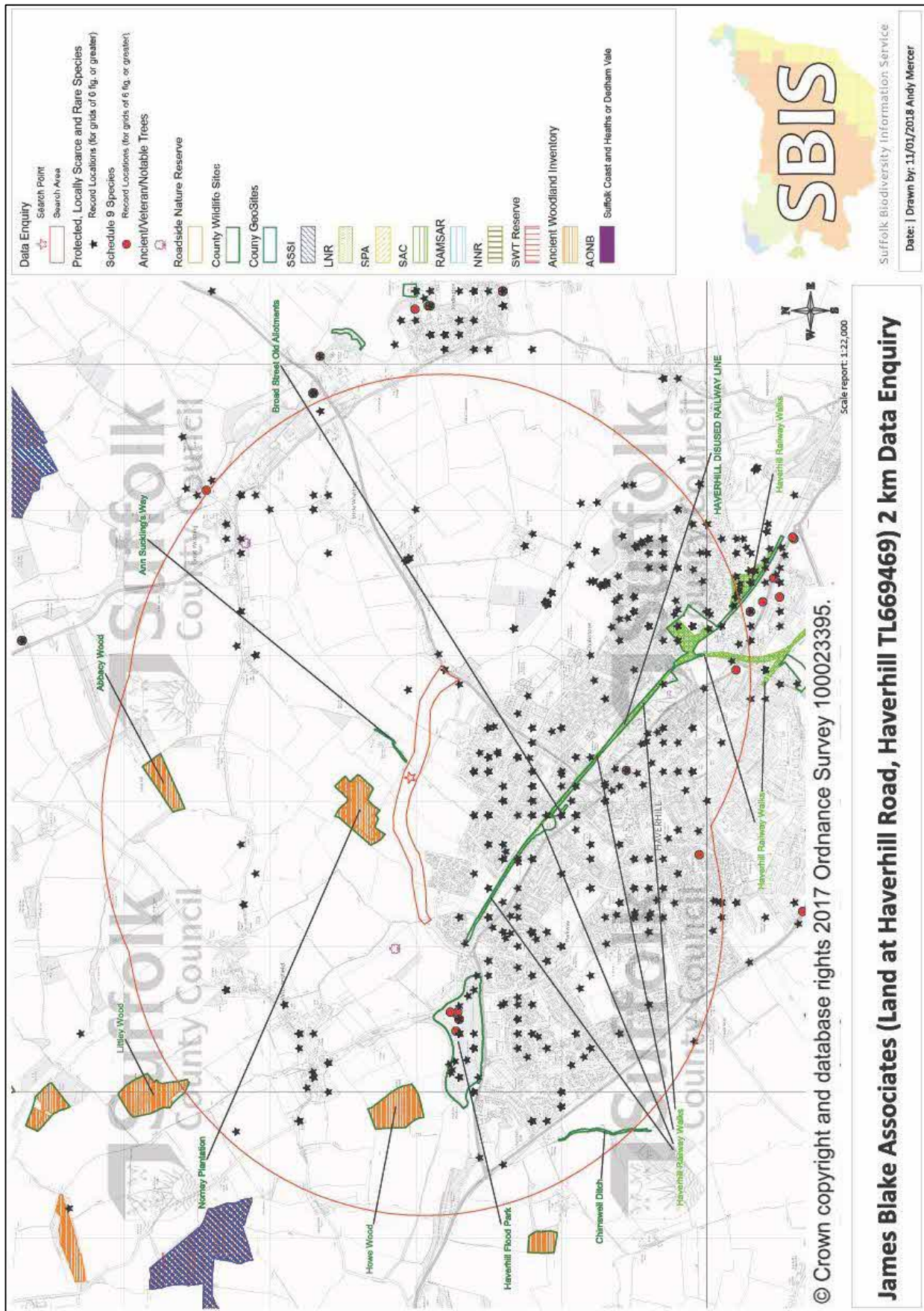
- 3.3 There were nine non-statutory conservation sites within 2km of the site all County Wildlife Sites (CWS). These are listed in Table 2 and shown in Figure 2.

Table 2: Statutory and non-statutory conservation sites within 2km of the site

Site Name	Designation	Distance from Site	Description
Ann Suckling's Way	CWS	Adjacent to northern boundary of site	Ann Suckling's Way is a footpath and bridleway with wide grassy verges, supporting a species-rich flora including wild carrot, spiny restharrow and sulphur clover. It also supports a population of crested cow-wheat.
Norney Plantation	CWS	65m north	Ancient woodland reported to have large starling roost.
Haverhill Railway Walks	LNR	290m south	Areas of dense species-rich, native scrub composed of elder, blackthorn, hawthorn, field-rose, dog-rose, field maple, oak and ash. There are also areas of unimproved grassland. The mosaic of habitats supports a good range of wildlife and it is particularly important for breeding birds and reptiles.
Haverhill Disused Railway Line	CWS	290m south	
Haverhill Flood Park	CWS	490m west	Situated to the western outskirts of Haverhill. The grassy embankments of the reservoir support a species-diverse flora which is improving diversity. The boulder clay soils support a number of scarce plant species such as sulphur clover and pyramidal orchid. Skylarks, meadow pipits and reed bunting breed here.
Broad Street Old Allotment	CWS	950m south	Disused allotment site situated in the northern part of Haverhill adjacent to the south border of the disused railway line. The land is managed by the owners to attract and provide

			suitable habitats for many kinds of wildlife. It is particularly important for reptiles.
Howe Wood	CWS	1.1km west	Ancient woodland dominated by hornbeam coppice with ash, field maple and oak.
Abbacy Wood	CWS	1.4km north	Ancient woodland situated close to Trundley Wood. The diversity of woodland plants here is high with a good range of shrubs and woodland flora.
Chimswell Ditch	CWS	1.7km south west	A small watercourse, situated close to the outskirts of Haverhill on the western side. The deep sided watercourse is overgrown with dense scrub consisting of elm, hazel, sycamore, horse chestnut and oak. It provides important nesting habitat for birds . There is also a population of green hellebore here.
Littley Wood	CWS	1.9km north west	Ancient woodland situated close to the Over and Lawn Woods. The wood is dominated by ash, field maple, ash and oak. The abundance of dead wood here provides suitable habitat for invertebrates and hole-nesting birds.

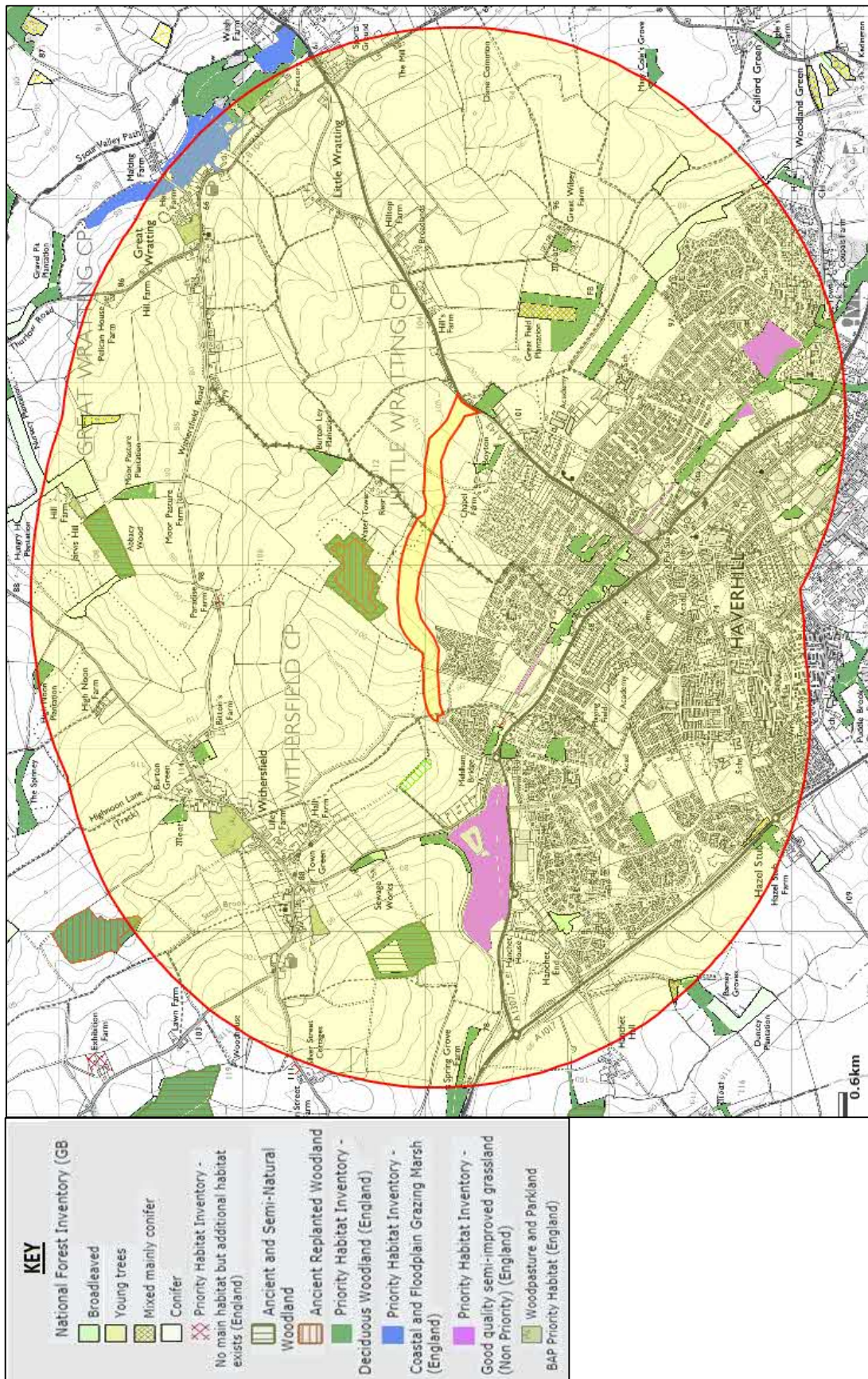
Figure 2: Statutory and non-statutory sites within 2km



Habitat Types within 2km

- 3.4 Habitat types within the area included ancient and semi-natural woodland, ancient replanted woodland, deciduous woodland, woodpasture and parkland, coastal and floodplain grazing marsh and good quality semi-improved grassland. The nearest deciduous woodland lay approximately 17m to the south east and 74m to the north of the site. Areas of ancient replanted woodland and semi-natural ancient woodland also lay approximately 74m to the north of the site boundary. The areas of woodpasture and parkland were located approximately 1.1km north west of the site. The nearest area of good quality semi-improved grassland was approximately 406m south of the site as part of the County Wildlife Site of Haverhill Disused Railway Line. There was also an area of coastal and floodplain marsh which was approximately 1.8km north east of the site boundary. Broadleaved, young trees, conifer and mixed (mainly conifer) habitats were also identified within the 2km search area. See Figure 3.

Figure 3: Habitat types within 2km



Protected, priority and rare species

- 3.5 The Birds of Conservation Concern (BoCC) are split into three criteria. The red list is the highest conservation priority (species needing urgent action). The amber list is the next most critical group, followed by green. Red listed species are those that are globally threatened according to IUCN criteria, species with populations or ranges that have declined rapidly in recent years, and those that have declined historically and have not shown a substantial recent recovery.
- 3.6 Full lists of UK principally important and protected amphibians, reptiles and mammals are shown below. A reduced list of UK principally important and protected birds, plants and invertebrates is shown; these have been selected based on their likelihood of being recorded at the site given the habitats types present.

Birds	Protection	Approximate distance from site	Recent year within 2km
Barn owl	WCA 1; European protected	828m west	2014
Black redstart	BoCC red list; WCA 1	Within same 2km square as site	2012
Brambling	WCA 1	320m south	2009
Bullfinch	BoCC amber list; SPI; LBAP	840m east	2014
Corn bunting	BoCC red list, LBAP, SPI,	Within 2km square, 950m north	2009
Cuckoo	BoCC red list; SPI; LBAP	Within 2km square, 1.2km east	2010
Dunnock	BoCC amber list; SPI; LBAP	Within 2km square, 1k north east	2011
Fieldfare	BoCC red list; WCA 1	Within same 2km square as site	2013
Goldcrest	WCA5	Within 2km square, 1km north	2011
Grasshopper warbler	BoCC red list; SPI; LBAP	Within 2km square, 975m north west	2011
Greylag goose	BoCC amber list; WCA 1	Within 2km square, 80m west	2011
Grey partridge	BoCC red list; SPI; LBAP	Within 2km square, 625m south east	2011
Herring gull	BoCC red list; LBAP	Within 2km square, 1km north east	2011
Hobby	WCA 1; European protected	Within same 2km square as site	2014
House martin	BoCC amber list;	Within same 2km square as site	2014
House sparrow	BoCC red list; SPI; LBAP	1.2km west	2016
Kestrel	BoCC amber list; SPI;	1km west	2016
Kingfisher	BoCC amber list; WCA 1;	500m south east	2015

Lapwing	BoCC red list; SPI; LBAP	Within 2km square, 1km north	2009
Linnet	BoCC red list; SPI; LBAP	Within 2km square, 980m north	2011
Little egret	WCA5	1.5km south	2016
Little owl	WCA5	Within 2km square, 685m south east	2011
Marsh tit	BoCC red list; SPI; LBAP	Within 2km square, 1km north	2011
Meadow pipit	BoCC amber list;	Within same 2km square as site	2010
Nightingale	BoCC red list	815m south east	2014
Redwing	BoCC red list; WCA 1	Within 2km square, 1.2km east	2013
Reed bunting	BoCC red list; SPI; LBAP	1km west	2016
Short-eared owl	WCA5	Within same 2km square as site	2012
Skylark	BoCC red list; SPI; LBAP	Within 2km square, 285m east	2011
Song thrush	BoCC red list; SPI; LBAP	Within 2km square, 1km north	2011
Spotted flycatcher	BoCC red list; SPI; LBAP	Within 2km square, 1km north	2013
Starling	BoCC red list; SPI	1.4km south east	2016
Swallow	WCA5	922m west	2016
Swift	BoCC amber list	860m south	2017
Tawny owl	BoCC amber list;	1.4km east	2014
Turtle dove	BoCC red list; SPI; LBAP	Within 2km square, 1km north east	2011
Wheatear	BoCC amber list	Within 2km square, 1km north east	2013
Yellow wagtail	BoCC red list; SPI; LBAP	1km south	2017
Yellowhammer	BoCC red list; SPI; LBAP	920m west	2016
		830m east	2014

Mammals	Protection	Approximate distance from site	Year of Record
Hedgehog	SPI; LBAP	1.2km north	2017
Harvest mouse	LBAP	Within 2km square, 700m south east	2001
Hazel dormouse	European Protected, LBAP, SPI	1.7km south east	2007
Water vole	WCA5; SPI; LBAP	Within 2km square, 700m south east	2003
Unidentified bat	European protected	1.8km south east	2014
Western barbastelle	European protected , SPI,	1.2km south east	2014

	Annex II species, LBAP		
Serotine bat	European protected	460m south east	2014
Daubenton's bat	European protected	1.1km south	2000
Brown long-eared	European protected; SPI; LBAP	Within 2km square, 240m east	2012
Noctule bat	European protected; SPI; LBAP	1.2km south east	2014
Common pipistrelle	European protected	1.3km north west	2015
Soprano pipistrelle	European protected; SPI; LBAP	1.8km south east	2014

Invertebrates	GB Red Data list/Protection	Approximate distance from site	Year of Record
Broad-faced mining bee	<i>Rare</i>	Within same 2km square as site	2007
Cinnabar	SPI	Within same 2km square as site	2015
Small heath butterfly	SPI, LBAP; <i>Near Threatened</i>	830m west	2016

Plants	IUCN Red Data list/Protection	Approximate distance from site	Year of Record
Cornflower (<i>Centaurea cyanus</i>)	<i>Endangered</i> ; SPI; LBAP	1.9km south east	2004
Corn chamomile (<i>Anthemis arvensis</i>)	<i>Endangered</i>	Within 2km square, 100m west	1998
Stinking chamomile (<i>Anthemis cotula</i>)	<i>Vulnerable</i>	1.9km south east	2004
Sulphur clover (<i>Trifolium ochroleucon</i>)	<i>Rare</i>	1.4km south east	2011

Amphibians	Protection	Approximate distance from site	Year of Record
Toad	SPI; LBAP	785m east	2015

Reptiles	Protection	Approximate distance from site	Year of Record
Common lizard	Partially protected under the WCA Schedule 5; LBAP	1km south east	2014
Grass snake		1.1km south east	2014
Slow worm		1.5km south east	2006

*WCA = Wildlife and Countryside Act 1981 as amended; SPI = Species of Principle Importance;
LBAP = Local Biodiversity Action Plan; BoCC = Birds of Conservation Concern 4*

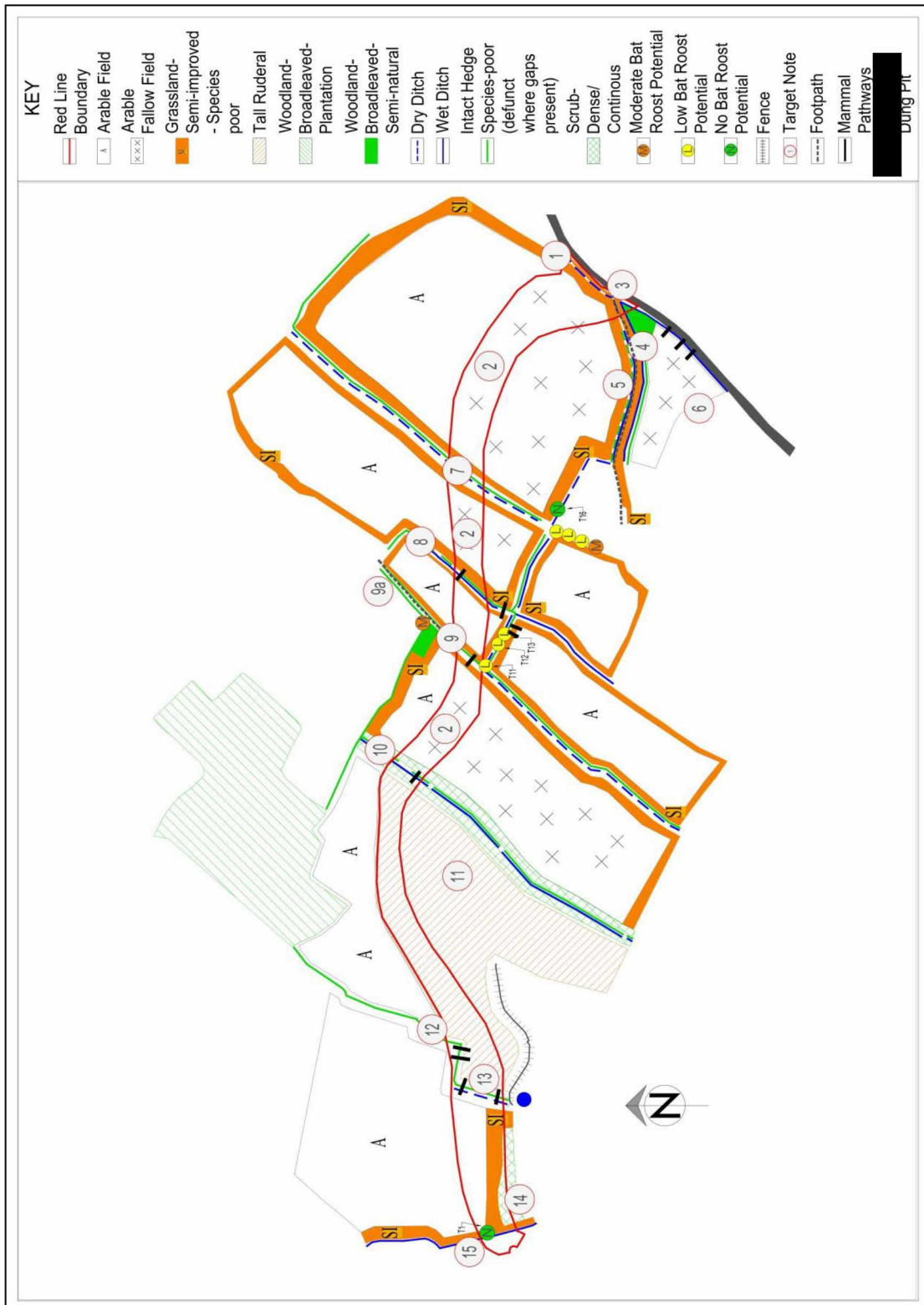
Phase 1 Habitat Survey

- 3.7 Figure 4 shows a Phase 1 habitat map of the site, with Target Notes. A list of plant species identified on the site at the time of the survey is included in Appendix A.




Limitations and Assumptions





- 3.8 The baseline conditions reported and assessed in this document represent those identified at the time of the survey on the 4th January 2018. Although a reasonable assessment of habitats present can be made during a single walkover survey, seasonal variations are not observed. The plant species list (Appendix A) was based on the current site visit. The survey was conducted in January, which is outside the optimal season for Phase 1 habitat surveys. Sulphur clover was not noted present on site at the time of the survey; however an updated plant list and sulphur clover survey will take place in the summer during optimal botanical survey dates.
- 3.9 The desk study used available records and historical data from the local area. However, this does not provide a reliable indication of species present since records depend entirely on survey effort in the area, which is highly variable. The data are useful as a general guide to supplement the site visit, but absence of records does not reflect absence of species.





Figure 4: Phase 1 Habitat Map








Target Notes

Target Note	Habitat description	Photo
1	<p>Semi-improved grassland margin between arable field and main road. Sward height between 10cm and 30cm with the longer grasses closer to the ditch (see TN3) and hedgerow (see TN4).</p>	
2	<p>Arable field left fallow. Areas of tall ruderal vegetation scattered throughout which was dominated by bristly oxtongue (<i>Helminthotheca echioides</i>).</p> <p>Other arable fields within the site were similar in structure and species.</p>	
3	<p>Within the semi-improved grassland margin was a ~1m deep dry ditch which was ~30m wide. The ditch had steep banks of semi-improved grasses. A wet ditch with shallow water (10-20cm deep) was present adjacent to the track joining the main road. The wet ditch had banks of grass and tall ruderal.</p>	

<p>4</p>	<p>Hedgerow along the south west side of the track. The hedgerow was outgrown and on average 3m wide; however it was 5m wide at the western boundary adjacent to the main road. The height ranged between 5m and 10m.</p> <p>A small patch of woodland (G18) was present at the southern end of the hedgerow.</p>	
<p>5</p>	<p>Hedgerow along the north eastern side of the track. It was a young hedgerow, on approximately 1m-2m wide and 3m-4m high with large gaps.</p> <p>The trackway comprised short semi-improved grassland.</p>	
<p>6</p>	<p>Arable field which has been left fallow with short grassland and scattered tall ruderal vegetation similar to TN2.</p>	
<p>7</p>	<p>Managed hedgerow (H15) growing on dry ditch approximately 2m high and 1m wide</p>	

<p>8</p>	<p>Hedgerow (H14), approximately 3m high and 1.5m-2m wide, growing on wet ditch. Large gaps were present throughout the hedgerow. The ditch had a bank less than 1m deep and 40cm wide. Water within the ditch was shallow, approx. 5cm deep.</p>	
<p>9</p>	<p>Dense overgrown hedgerow (H10) on dry ditch. The hedgerow was 3m high and 3m wide. Semi-improved grassland margin was adjacent to the hedgerow with a recently ploughed arable field.</p>	
<p>9a</p>	<p>To the north of H10 a pathway was present lined on either side with semi-mature trees, which formed part of Ann Suckling's Way.</p>	
<p>10</p>	<p>5m high and 3m wide dense hedgerow (G6) growing on a wet ditch. There were occasional large gaps in hedgerow. Scrub vegetation grew out 3m of hedgerow base on both sides. The wet ditch was similar to that in TN8.</p>	

<p>11</p>	<p>Arable field left fallow which is now dominated by tall ruderal vegetation including wildowherb. The field had an average height of 30cm.</p>	
<p>12</p>	<p>Intact dense hedgerow (H4) with an average height of 5m and 3m wide.</p>	
<p>13</p>	<p>Towards the south the hedgerow (H4) becomes less dense than the section shown in TN12. The hedgerow was 4m high with a width of 2m, on a shallow dry ditch.</p>	
<p>14</p>	<p>Semi-improved grassland. Adjacent to the arable field sward height was less than 5cm . Within the rest of the area longer grasses grew (sward height approx. 30cm) with patches (incl. G2) of and scattered scrub.</p>	

15	<p>Flowing wet ditch with a rocky bed with steep 3m high banks lined with scrub and semi-improved grassland banks. The ditch was 1m wide at its base with 30cm deep water.</p>	
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4 Protected Species – Results and Evaluation

Flora and habitats

- 4.1 **Arable/tall ruderal fields-** The majority of the site was arable fields left fallow where tall ruderal vegetation had grown. Areas of tall ruderal were dominated by bristly oxtongue (*Helminthotheca echioides*). There were scattered grasses throughout with an average sward height of less than 5cm.
- 4.2 **Semi-improved grassland margins-** Species-poor semi-improved grassland margins bordered many of the arable fields and hedgerows throughout the site. Margins were dominated by common grass species. Sward height increased near hedgerows and ditches with an average sward height being between 10cm and 30cm. The grassland margins, particularly to the centre of the site leading to Ann Suckling's Way CWS, were regularly used as a public footpath and bridleway so the ground was well trodden.
- 4.3 **Hedgerows-** Multiple hedgerows were recorded throughout the site with varying heights and width. Most of these hedgerows were comprised mainly of hawthorn and blackthorn (*Prunus spinosa*). Many of the hedgerows on site were associated with wet and dry ditches. None of the hedgerows on the site were considered likely to be classified as 'important' under the Hedgerow Regulations 1997.
- 4.4 Two hedgerows were recorded within the Phase 1a & 1b site along Boyton Hall Track LWS. The hedgerow along the southern side of the track was outgrown with scrub species in places and ranged from 3-5m wide by 5-10m tall. The hedgerow along the northern side of the track was younger and gappy, ranging from 1-2m wide to 3-4m tall.
- 4.5 **Trees-** There were a few semi-mature and mature trees on the site within the hedgerows and along the boundaries. All trees on the site were considered to have negligible bat roost potential. Trees with low to moderate bat roost potential were present outside the relief road development boundary.
- 4.6 **Wet/dry ditches-** Multiple wet and dry ditches were found throughout the site. Two ditches were present on site at Phases 1a and 1b, and were associated with the hedgerows along Boyton Hall Tack LWS. One ditch was dry close to the road bordering the eastern site boundary which became wetter along the southern track hedgerow. This ditch measured 30cm wide by 1-1.5m deep. There was a second

ditch along the northern track hedgerow which was also wet and 30m wide by 1-1.5m deep.

- 4.7 No rare, principally important, local BAP or protected plant species were recorded at the site during the survey. However, sulphur clover (*Trifolium ochroleucon*) which is a rare plant species was recorded on site in 2007 (Bidwells, 2007), but not during the 2016 surveys (SES, 2016). Two vulnerable, two endangered and one rare plant species as categorised by the JNCC red list, were highlighted within 2km in the desk study which could use habitats present on site. These plant species included cornflower (*Centaurea cyanus*), corn chamomile (*Anthemis arvensis*), sulphur clover (*Trifolium ochroleucon*) and stinking chamomile (*Anthemis cotula*). None of these species were noted on site during the recent site visit, and only sulphur clover had previously been found on site. However, the survey was conducted outside the optimal period for botanical surveys.
- 4.8 A survey for sulphur clover is recommended between the months of June and July, as this species was previously recorded on site.

Bats

- 4.9 There were no buildings on the site. A number of trees within the site boundary were semi-mature and mature. However, all of these lacked features suitable for roosting bats and were thus considered to have negligible bat roost potential. Trees outside proposed road boundary were considered to have low to moderate bat roosting potential due to features such as loose bark, woodpecker holes and dead wood. These will not be directly affected by the proposed road, but any bats using them may be impacted by the segmentation of the neighbouring hedgerows.
- 4.10 The site provided good quality, but limited foraging habitat and potential commuting routes for bats such as hedgerows, tall ruderal vegetation, semi-improved grassland margins, and wet ditches. . These habitats are abundant in the wider landscape, with hedgerow providing connections to scattered woodland.
- 4.11 Several bat species were highlighted within 2km in the desk study. These included western barbastelle, serotine, Daubenton's, brown-long eared, noctule, common pipistrelle and soprano pipistrelle.
- 4.12 The woodland where the low potential trees were identified within the Phase 1 residential development will not be felled as part of that development, and is not part of Phases 1a and 1b of the Eastern Roundabout; however bats are considered likely to use the hedgerows and trees nearby for foraging and commuting, which will be

affected by the construction works,. Barbastelle bat is a rare species with a restricted range, in particular, and is a species which is strongly associated with woodland habitats and woodland edge.

- 4.13 Therefore, it is recommended that bat activity surveys are carried out to ascertain the level of bat activity within the fields and boundary vegetation. Bat activity surveys require one survey a month during the bat active season plus overnight monitoring. A total of six surveys will be conducted between April and September
- 4.14 No trees within the proposed relief road boundary were identified as having bat potential. Some trees with low and moderate potential were identified within the larger development. If any moderate trees with bat roost potential are to be impacted by the development, including surgery works or removal, further bat surveys, i.e. emergence/return to roost surveys, should be undertaken prior to works. Bat surveys can be undertaken between April and September (preferably May and August). Climb and inspect surveys may be able to rule out the need for emergence surveys if features, once closely inspected, are found to be unsuitable for roosting bats. Climb and inspect surveys can be conducted year round and should be undertaken by a bat licensed ecologist.
- 4.15 If any trees with low bat roost potential require removal, these will need to be soft felled under the direct supervision of a bat licenced ecologist during the active bat season (April to September)
- 4.16 To minimise risk of disturbance to foraging and commuting bats on the site, it is recommended that the development should follow lighting minimisation precautions, including the following:
- No works on site should be conducted after sunset and if security lighting is required then this should be kept to the minimal level (as necessary for safety and security)
 - Post development lighting should be directed away from boundary trees and vegetation, in particular, away from the trees with bat roosting potential.
 - Installation of lighting columns at the lowest practical height level with box shield fittings will minimise glare and light spillage
 - Lux level of lamps should be as low possible and be high pressure sodium (rather than metal halide, or other) with covers made from glass rather than

plastic as this minimises the amount of UV light, reducing the attraction effects of lights on insects

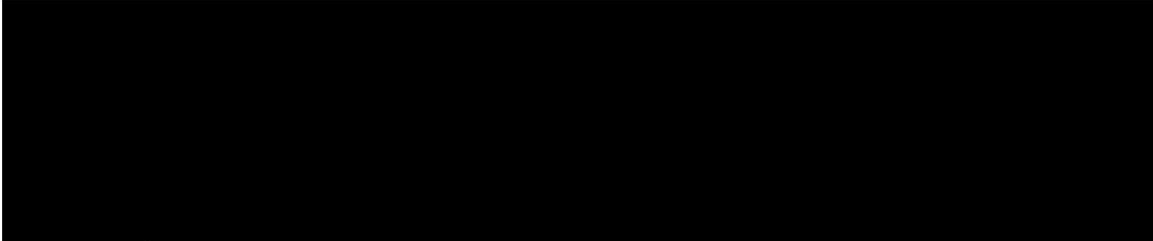
- Security lights should be set on short timers, and be sensitive to large moving objects only.

Reptiles



- 4.17 The semi-improved grassland margins and tall ruderal vegetation provided moderate quality habitat for reptiles, with the hedgerows providing hibernation and sheltering opportunities.
- 4.18 There are records of grass snake, common lizard and slow worm within 2km of the site from 2006 and 2014. Slow worms and grass snakes were considered to be the most likely species to be present, given the structure of the vegetation.
- 4.19 It is recommended that reptile surveys are undertaken to assess the presence or likely absence of these species.
- 4.20 Reptile surveys can be undertaken between April and September (depending on weather), and involve seven visits to the site to survey previously laid artificial refuges. Surveys should follow current best practice guidelines (Froglife 1999).
- 4.21 Previous surveys found no reptiles to be present in the area of the proposed eastern roundabout (Phases 1a & 1b) in 2016 (SES, 2016). It was considered that there was a likely absence of reptiles on the development site. The Phase 1 habitat survey found similar vegetation structure to that found in 2016 and which was considered to be sub-optimal for reptiles. Therefore, no further surveys for Phase 1a and Phase 1b are considered necessary and there will be no mitigation constraints for Phase 1a and Phase 1b with regards to reptiles.

Birds

- 4.22 Trees and hedgerows throughout and surrounding the site provided potential nesting and foraging opportunities for birds. The arable and tall ruderal fields were considered suitable for ground nesting birds due to little disturbance and the size of the fields.
- 4.23 Bird species observed during the field survey included a flock of green finch and wood pigeon. Six skylarks, which are BoCC red listed and NERC Section 41 species was present on the site during the survey.

- 4.24 Any trees/hedgerows proposed for retention should be suitably protected from harm during the construction works following British Standard: BS5837 (2012).
- 4.25 Only a small number of records for wintering birds were highlighted in the 2km desk study and therefore the proposed development is not considered likely to disturb large populations of these species. No further surveys in regards to wintering birds are considered necessary.
- 4.26 
- 4.27 As the site vegetation was suitable for nesting birds, site clearance and works proposed to any field vegetation, trees, scrub or hedges should be conducted outside the main bird breeding season (which is March until September). For clarity, vegetation removal should be undertaken between October and February inclusive. If vegetation removal is unavoidable between these dates, an ecologist should survey the site for active bird nests immediately prior to works commencing. If active nests are identified, a radius of 5m of vegetation should be left around the nest and no clearance work should be undertaken until the young have fledged. Therefore, there may be a delay in the clearance of some vegetation until all young birds have fledged.

Amphibians

- 4.28 There were no ponds on site, however six ponds and several wet ditches were located within 500m of the site boundary. Wet ditches were present within the site, and the closest pond was approximately 150m from the boundary of the site. Locations of ponds are shown in Appendix B.
- 4.29 The ponds were not accessible at the time of survey and it was therefore not possible to carry out a Habitat Suitability Index (HSI) assessment to ascertain its 
- 4.30 Habitats on the site were considered to be suitable  based on the presence of semi-improved grassland margins and tall ruderal vegetation providing foraging opportunities and hedgerows suitable for shelter and hibernation.

4.31

4.32

4.33 However, to ascertain whether this species is present within Phases 2 and 3 of the relief road, updated survey for [REDACTED] suitable water bodies within 500m of these phases is recommended. Full [REDACTED] can be undertaken between mid-March and mid-June (weather dependant), with at least half of the surveys carried out during the peak breeding season (mid-April to mid-May). Surveys consist of four survey visits to determine presence/likely absence. An addition two survey visits are undertaken [REDACTED] present, with at least three survey visits undertaken between mid-April and mid-May..

4.34

Invertebrates

4.35 The arable fields were not considered likely to support a large number of invertebrates due to the lack of plant diversity. However, the areas of tall ruderal vegetation, scrub and hedgerows did provide potential habitat for common invertebrates.

4.36 The data search highlighted records of the small heath butterfly, cinnabar moth and broad-faced mining bee within 2km of the site. While some food plants for these species were present with the site, the habitats within the site were suboptimal and limited for these species. Additionally, similar habitats were present within the wider landscape. Therefore, the local conservation status of invertebrates is unlikely to be significantly affected by the proposed development.

4.37 No further survey is necessary.

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4.43 The site was considered potentially suitable for dormice. Many hedgerows had not been intensively managed and were relatively continuous, providing cover and foraging opportunities for dormice. Woodlands outside the site boundary provided potential habitat for dormice with mature canopy structure. Hedgerows on the site provided potential corridors for dormice to move between woodland areas connected to the site.

4.44 There was a record of dormice highlighted in the 2km desk study 1.7km south east of the site boundary in 2007.

4.45 Further surveys are recommended. Dormouse surveys should be undertaken between the months of April and November and involve placing nest tubes along hedgerows and in woodland areas which should be checked throughout the survey season for evidence of dormice, following approved guidelines.

- 4.46 The survey must be undertaken by a suitable experienced ecologist, who holds a current Natural England survey licence for hazel dormouse.
- 4.47 Hedgerows found present within the area of the proposed eastern roundabout (Phases 1a & 1b) were considered to be suitable for dormice. A precautionary measure in two stages would be necessary before works in this area can proceed; stage one will be to cut down the hedgerow to 30cm within the months of December and February under ecological supervision. Stage two will be to cut down the hedgerow from 30cm to root between the months of May and October under ecological supervision.

Water vole

- 4.48 There were several wet ditches within the site and adjacent to the site which were considered not suitable for water vole due to dense scrub vegetation on the banks and/or shallow water. However, the western-most wet ditch was considered to be sub-optimal for water vole due to lack of preferred food species, such as sedges, on the banks. No definite evidence of water vole was recorded during the site visit; however, the visit was conducted during the sub-period for recording signs for this species.
- 4.49 The desk study highlighted water vole within 2km of the site boundary in 2003. There were no results for otter.
- 4.50 Further surveys of suitable waterways for water vole are recommended. Water vole surveys consist of two surveys carried out between the months of April and September.
- 4.51 The proposed development must not result in the loss or damage to water vole habitat if signs of water vole are found during the further survey work. Where this is likely to occur, the proposed development should use avoidance measures to avoid negative impacts to water vole, or a mitigation licence issued by Natural England would be required in order to translocate water voles, and undertake appropriate mitigation.

Other Protected, BAP or Rare Species

- 4.52 The desk study highlighted records of harvest mice and hedgehogs within 2km of site. Habitats on site were sub-optimal for harvest mice, e.g. fallow fields did not have densely packed vegetation, and there is only limited long grassland in the field margins. Habitats on site were suitable for hedgehogs with hedgerows and

grassland suitable for sheltering and/or foraging. Hedgerows and arable fields are abundant within the wider landscape.

- 4.53 Two-stage clearance of hedgerows and removal of vegetation within arable field and margins during winter months previously discussed in the dormouse and bird section will also minimize impact to hedgehogs and harvest mice during construction.
- 4.54 The proposed development was considered unlikely to impact on any other protected, BAP or rare species.

Potential Impacts to Conservation Sites

- 4.55 There were no European protected sites within 7km of the development area.
- 4.56 The table below shows SSSIs that were highlighted in the desk study as being within potential impact distance of the site.

Table 5: SSSI Impact Risk Zones which lay within the development site

SSSI Site	Distance	Public Accessibility
Over and Lawn Woods	2.2km north west	Public footpaths
Trundley Wood	2.9km north	Public footpaths
Wadgell's Wood	4.4km north	Public footpaths
Langley Wood	6.8km south west	Public footpaths
Balsham Wood	7.4km north west	Public footpaths
Ashdon Meadows	9.5km south west	Public footpaths
Hales and Shadwell Woods	10.3km south west	Public footpaths, nature reserve, car parking facilities
Cavendish Woods	10.3km north east	Public footpaths
Nunn Wood	10.4km south west	Public footpaths
Hay Wood, Whepstead	16.8km north east	Public footpaths

- 4.57 It is unlikely the relief road itself would cause increase visitor numbers to these SSSI or to the CWSs and LNRs highlighted within the desk study. However, the larger housing development may create impacts from increased number of dog walkers and horses to these sites, particularly Ann Suckling's Way CWS. This could be mitigated using appropriate management regimes and/or financial contributions.

5 Key Recommendations: Legal Requirements

- 5.1. [REDACTED]
relief road. These species are protected under EU and/or UK law and loss of habitat or disturbance to these species should be adequately mitigated.
- 5.2. [REDACTED] and are listed in the European Commission Habitats and Species Directive. They are also protected by the Wildlife and Countryside Act 1981 (as amended) [REDACTED]
surveys of the ponds and wet ditches within 500m of the site must be undertaken, with an additional two surveys undertaken to estimate population size [REDACTED]
[REDACTED]
- 5.3. All bat species are European protected species which means that their roosts are protected, even if they are not present at the time of the work. Bats are listed in the European Commission Habitats and Species Directive. They are also protected by the Wildlife and Countryside Act 1981 (as amended). Bat activity surveys should be undertaken to assess bat use of the site and undertaken on a monthly basis between April and September.
- 5.4. Dormice are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Dormice are also classified as a European protected species under Conservation of Habitats and Species Regulations 2010, as amended. Dormice tubes should be placed on site in April and then checked every 6 to 8 weeks between the months of May and November by a licensed ecologist.
- 5.5. Water voles are protected by the Wildlife and Countryside Act 1981 (as amended) and also protected by the Wild Mammals Protection Act 1996. Water vole surveys include the inspection of any waterbodies on site and within 50m of the site boundary. Two visits should be carried out between the months of April and September.
- 5.6. Badgers are protected under the Protection of Badgers Act (1992) therefore surveys [REDACTED]
[REDACTED]
- 5.7. Widespread reptiles are partially protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which protects them from killing and injury. Reptile surveys require seven visits to survey previously placed artificial refuges.

Surveys should follow current best practice guidelines (Froglife, 1999) and be undertaken between April and September in suitable weather conditions.

- 5.8. All birds are protected by the Wildlife and Countryside Act 1981 (as amended) and certain species listed on Schedule 1 of the WCA are given additional protection. Breeding bird surveys involve one site visit per month between April and July.
- 5.9. Hedgehogs are species of principal importance (SPI) under the NERC Act 2006 and are protected by the Wild Mammal Protection Act 1996. Where suitable hedgehog habitat must be removed, it should be done by hand held mechanical tools under ecological supervision to avoid killing or injury. Where this is necessary, the vegetation should be cut to no less than 20cm and searched by an experienced ecologist before any further vegetation removal can be completed.
- 5.10. Precautionary clearance of the site and trees will be necessary, as detailed in Section 4, to avoid infringing legislation which protects all nesting birds.
- 5.11. Precautionary methods during Phases 1a and 1b, as detailed in Section 4, will be necessary to minimize impact on dormice, badgers, bats, and breeding birds. These methods should be detailed and secured within a CEMP.

6 Additional and Enhancement Recommendations

- 6.1 The following are suggestions that will enhance the value of the site for wildlife. However, it should be noted that these suggestions are not legally required for compensation of habitats or mitigation, and may be revised depending on the outcome of the further surveys for reptiles, bats ██████████ hazel dormice, water vole, ██████████
- 6.2 Where possible, hedgerows at the boundaries of the site should be retained and enhanced to create corridors and shelter/foraging areas for wildlife including birds, bats, dormice and hedgehogs. Planting of native hedgerow species in gaps, for example along the southern and eastern boundaries will provide further opportunities for these species.
- 6.3 The addition of bat boxes on retained trees within or near the site would provide additional roosting opportunities. Schwegler bat boxes are recognised as being suitable for roosting bats and long lasting. Bat boxes should ideally be located south facing (between south east and south west) and above 5m. Boxes such as Schwegler 2F suitable for a range of bat species would be suitable for this site.
- 6.4 The addition of bird boxes on retained trees within or near the site will provide additional nesting opportunities for these species. A range of bird boxes will attract a greater diversity of birds to nest. Boxes should be located out of direct sunlight and close to, but not restricted by, vegetation and facing in a north-east to north-west direction.
- 6.5 Landscaping could incorporate native or wildlife attracting trees, shrubs, and wildflower areas, including coppicing and woodland areas, as these would likely be of benefit to a variety of wildlife including, birds, bats, dormice and invertebrates.
- 6.6 Landscape could also incorporate native grassland areas as bee orchid was recorded in the area on a previous survey.
- 6.7 The incorporation of reptile hibernacula into the landscape design will enhance the area for reptile ██████████ in the future. Hibernacula can be created by partially burying piles of wood/rubble and covering with earth.
- 6.8 'Hedgehog links' (i.e. 15cm diameter gaps at the base of fences) would allow small animals to move through the development.

7 Conclusion

- 7.1 The site was a series of arable and tall ruderal fields with managed hedgerows, scattered boundary trees, wet and dry ditches and an area of woodland to the south east of the site.
- 7.2 No further survey works are required for the commencement of Phase 1a and 1b. Works on relief road can proceed provided the precautionary measures outlined in Section 4 are followed.
- 7.3 Further survey prior to Phases 2 and 3 is recommended to determine if bats, dormouse, water vole, [REDACTED]
- 7.4 If any mitigation or compensation recommended following these further surveys is carried out, and if the precautionary measures for Phases 1a and 1b detailed in this report are followed, it was considered that the development could proceed with minimal impact on the local conservation status of any protected, principally important or rare species within the area.
- 7.5 It is also considered that with a sensitive landscape scheme, and by including some, or all, of the additional recommendations, the site could be enhanced for local wildlife post development.

8 References

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, third edition. The Bat Conservation Trust, London.

Eaton, M. Aebischer, N. Brown, A. Hearn, R. Lock, L. Musgrove, A. Noble, D. Stroud, D. & Gregory, R. (2015) Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. *British Birds* 108: 708-746.

English Nature (2004) Guidelines for Developers. English Nature, Peterborough

English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature

Environmental Protection Act (Duty of Care) Regulations 1991.

Froglife (1999) Reptile Survey An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. Froglife Advice Sheet 10.

Gent, A.H. and Gibson, S.D., eds. (1998) Herpetofauna Workers' Manual. Peterborough, Joint Nature Conservation Committee.

Harris S, Cresswell P and Jefferies D (1989) Surveying Badgers, Mammal Society

James Blake Associates, (2017) Haverhill Relief Road Tree Schedule on behalf Persimmon Homes Essex

JNCC (2010) Handbook for Phase 1 habitat survey: a technique for environmental audit (revised reprint) JNCC: Peterborough.

National Planning Policy Framework (2012) ISBN: 9781409834137.

SES (2016) Phase 2 Ecological Surveys and Assessment, on behalf of Persimmon Homes Essex

Strachan, R., Moorhouse, T. & Gelling, M. (2011) *Water vole Conservation Handbook* (3rd edition). WildCRu: Oxford.

Stroh, P.A., Leach, S.J., August, T.A., Walker, K.J., Pearman, D.A., Rumsey, F.J., Harrower, C.A., Fay, M.F., Martin, J.P., Pankhurst, T., Preston, C.D. & Taylor, I. (2014) A Vascular Plant Red List for England. Botanical Society of Britain and Ireland, Bristol.

W.J. Cresswell, J.D.S. Birks, M. Dean, M. Pacheco, W.J. Trehwella, D. Wells and S. Wray (2012) UK BAP Mammals Interim Guidance for Survey Methodologies, Impacts and Mitigation. Eds. The Mammal Society, Southampton.

Bibliography

EU, Habitats Directive, ec.europa.eu/environment

HMSO (1981) Wildlife and Countryside Act. HMSO, London.

HMSO (2010) Conservation of Habitats and Species Regulations 2010 (as amended) HMSO, London.

HMSO (2000) Countryside and Rights of Way (CRoW) Act. HMSO, London.

HMSO (1992) Protection of Badgers Act, HMSO London.

HMSO (2006) Natural Environment and Rural Communities Act HMSO London.

Stace, C (2005) *Field Flora of the British Isles*. Cambridge University Press.

SES (2015) Ecological Due Diligence Report, on behalf of Persimmon Homes Essex

SES (2016a) Ecological Scoping Survey, on behalf of Persimmon Homes Essex

SES (2016b) Landscape and Ecological Management Plan, on behalf of Persimmon Homes Essex

Web references

MAGIC: Designated area data downloaded from URL <http://www.magic.gov.uk.html> (Date Accessed 18th January 2018)

Suffolk Local BAP - www.suffolkbis.org.uk (Date Accessed 17th January)

Bees, Wasps & Ants Recording Society

<http://www.bwars.com/bee/andrenidae/andrena-proxima> (Date Accessed 18th January 2018)

Butterfly Conservation <https://butterfly-conservation.org/> (Date Accessed 18th January 2018)

Online Atlas of the British and Irish flora <https://www.brc.ac.uk/plantatlas/> (Date Accessed 18th January 2018)

9 Appendices

Appendix A: Plant species list

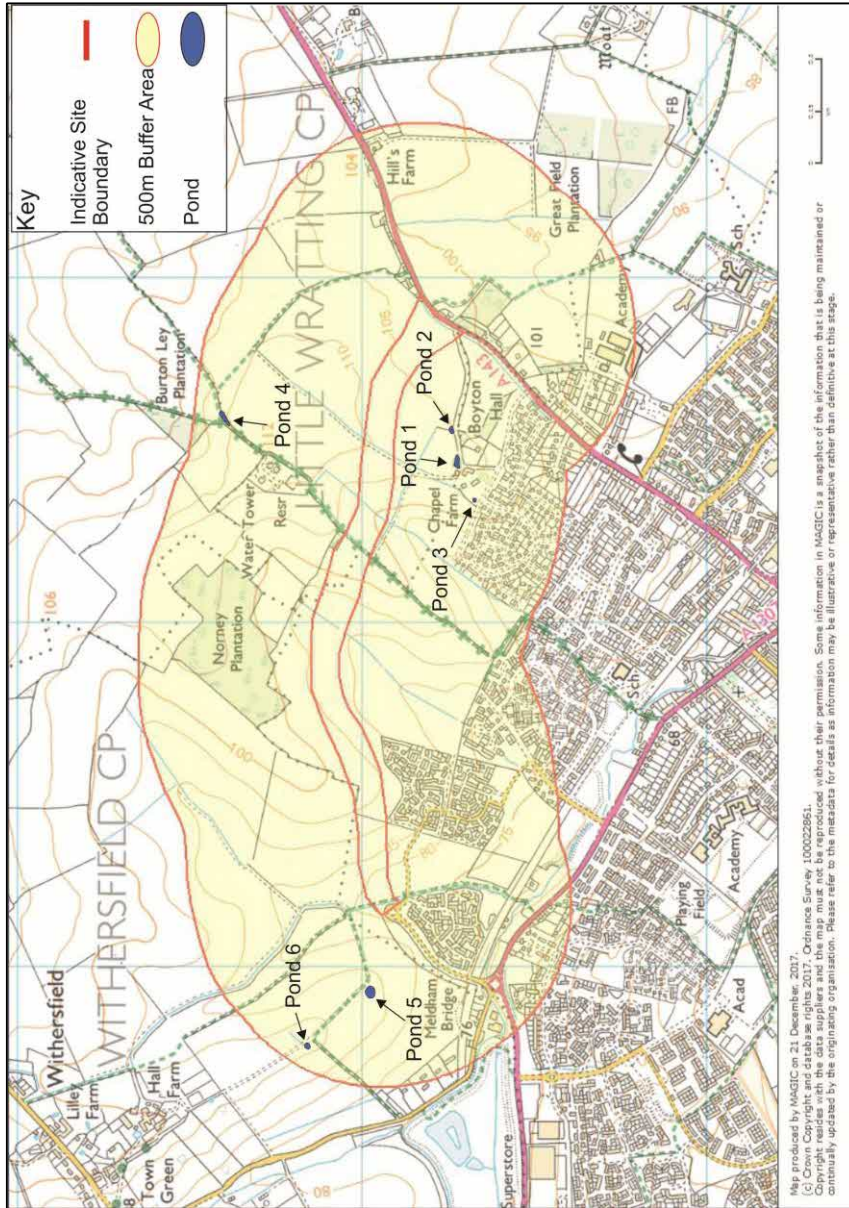
Forbs

Common Name	Scientific Name	Tall Ruderal	Hedgerow
Bristly oxtongue	<i>Helminotheca echiodes</i>	✓	
Willow herb	<i>Epilobium sp.</i>	✓	

Trees and shrubs

Common Name	Scientific Name	Scrub	Hedgerow
Hazel	<i>Corylus avellana</i>	✓	✓
Hawthorn	<i>Crataegus monogyna</i>	✓	✓
Ash	<i>Fraxinus excelsior</i>	✓	✓
Goat willow	<i>Salix caprea</i>	✓	✓
Blackthorn	<i>Prunus spinosa</i>	✓	✓
Dogwood	<i>Cornus sanguinea</i>	✓	
English Elm	<i>Ulmus procera</i>		✓
Alder	<i>Alnus glutinosa</i>	✓	
Field maple	<i>Acer campestre</i>	✓	✓
Gelder rose	<i>Viburnum opulus</i>	✓	
Oak	<i>Quercus robur</i>		✓
Dog rose	<i>Rosa canina</i>	✓	✓
Bramble	<i>Rubus fruticosus agg.</i>	✓	✓

Appendix B: Map of ponds within 500m of site boundary



Appendix C: Relevant protected species legislation

Species	Relevant Legislation	Level of Protection
Badgers	<ul style="list-style-type: none"> ○ Protection of Badgers Act 1992 ○ Badgers are also protected by the Wild Mammals (Protection) Act 1996 	<p>The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly:</p> <ul style="list-style-type: none"> • Damage a badger sett or any part of it • Destroy a badger sett • Obstruct access to, or any entrance of a badger sett • Disturb a badger whilst it is occupying a badger sett
Bats	<ul style="list-style-type: none"> ○ Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended ○ Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended ○ Also protected by the Wild Mammals (Protection) Act 1996 	<p>Under the WCA (1981), it is an offence to:</p> <ul style="list-style-type: none"> • intentionally kill, injure, or take any species of bat • intentionally or recklessly disturb bats • intentionally or recklessly damage destroy or obstruct access to bat roosts
Birds	<ul style="list-style-type: none"> ○ Protection under the Wildlife and Countryside Act (1981) as amended 	<p>Under the WCA (1981), it is an offence to: (with exceptions for certain species):</p> <ul style="list-style-type: none"> • Intentionally kill, injure or take any wild bird • Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) • Intentionally take, damage or destroy eggs <p>Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst nesting</p>
Dormice	<ul style="list-style-type: none"> ○ Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended ○ Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended 	<p>Under the WCA (1981), it is an offence to:</p> <ul style="list-style-type: none"> • intentionally kill, injure, or take dormice • intentionally or recklessly disturb dormice • intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection
Great crested newts	<ul style="list-style-type: none"> ○ Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended ○ Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended 	<p>Under the WCA (1981), it is an offence to:</p> <ul style="list-style-type: none"> • intentionally kill, injure, or take great crested newts • intentionally or recklessly disturb great crested newts • intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection
Widespread reptiles	<ul style="list-style-type: none"> ○ Partially protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended. 	<p>Under the WCA (1981), it is an offence to:</p> <ul style="list-style-type: none"> • intentionally kill or injure these animals • sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals

<p>Water vole</p>	<ul style="list-style-type: none"> ○ Habitat protected by the Wildlife and Countryside Act (1981) as amended 1998. ○ Water voles are also protected by the Wild Mammals (Protection) Act 1996 	<p>Under the WCA (1981), it is an offence to:</p> <ul style="list-style-type: none"> • Intentionally or recklessly damage or destroy or obstruct access to any place or structure which water voles use for shelter or protection • Disturb water voles whilst they are using such a place
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