



**COTEFIELD FARM, BODICOTE
ECOLOGY DESK STUDY AND PHASE 1
HABITAT SURVEY**

This is a confidential report which contains the locations of records of protected species and must not be issued or made public without the express permission of RPS

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CONTENTS

1	Introduction	1
2	Methodology.....	2
3	Results	4
4	Conclusions.....	16
5	References.....	19

FIGURES & APPENDICES

Figures

Figure 1: Non Statutory Site Designations

Figure 2: Bird Records

Figure 3: Mammal Records

Figure 4: Herptofauna Records

Figure 5: Plant Records

Figure 6: Phase 1 Habitat Survey

Appendices

Appendix 1: Example Data Request Letter

Appendix 2: Phase 1 Target Notes

Appendix 3: Phase 1 Species List

SUMMARY

- S.1 RPS was commissioned to carry out an Ecology Desktop Study and Phase 1 Habitat Survey of an area of land at Cotefield Farm in Bodicote, Oxfordshire by the landowner, Mr. Rowland Bratt.
- S.2 The objectives of the Ecology Desktop Study and Phase 1 Habitat Survey were to:
- Locate statutory wildlife sites within 1km of the site and non-statutory wildlife sites within 1km of it;
 - Locate records of protected or otherwise notable species within 1km of the site.
 - Map all habitats present within the site boundary according to the Joint Nature Conservation Committee Phase 1 Habitat Survey guidelines (JNCC, 2010);
 - Assess the habitats present for their potential to support protected or otherwise notable species, and to look for field signs of such species;
 - Determine whether any mitigation would be required to ensure protected species are not affected by the proposals for the site.
- S.4 Letters requesting data on designated wildlife sites and/or species records were sent to the organisations detailed in Table 1.
- S.5 The desk study identified that there are no statutory wildlife sites within 5km of the site and 4 non-statutory wildlife sites within 2km of it.
- S.6 Records were provided for 7 bat species within 5km of the site and a number of additional bat records were provided which were not identified to species. A number of bat roosts were also recorded near King's Sutton, which is approximately 3km east of the site.
- S.7 
- S.8 A total of 60 species of bird, 4 herptofauna, and one plant were recorded within 2km of the site. Bird species most commonly recorded closest to the site include Green Woodpecker, Swift, Red Kite and Kestrel.
- S.9 The Phase 1 Habitat Survey was carried out on the 10th June 2013. The survey followed the standard method as set out by the Joint Nature Conservation Committee (JNCC, 2010), and covered the survey area shown on Figure 1.
- S.10 The Phase 1 Habitat Survey identified that the survey area consists predominately of arable farmland bordered by hawthorn dominated hedgerows and a mixed plantation woodland. An area of semi mature mixed woodland is in the southeast corner of the site.

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- S.11 The site was found to have the potential to support five groups of protected species; amphibians, bats, nesting birds, reptiles and invertebrates, However none were recorded on site during the survey visit.
- S.12 Recommendations are provided in the report for ensuring ecological features are protected.

1 Introduction

- 1.1 RPS was commissioned to carry out an Ecology Desktop Study and Phase 1 Habitat Survey of an area of land at Cotefield Farm in Bodicote, Oxfordshire by Banner Homes Group who proposes to submit a planning application for a residential development on the site.
- 1.2 The location of the site is shown on Figure 1.
- 1.3 The objectives of the Ecology Desktop Study and Phase 1 Habitat Survey were to:
- Locate statutory wildlife sites within 1km of the site and non-statutory wildlife sites within 1km of it;
 - Locate records of protected or otherwise notable species within 1km of the site.
 - Map all habitats present within the site boundary according to the Joint Nature Conservation Committee Phase 1 Habitat Survey guidelines (JNCC, 2010);
 - Assess the habitats present for their potential to support protected or otherwise notable species, and to look for field signs of such species;
 - Determine whether any mitigation would be required to ensure protected species are not affected by the proposals for the site.
- 1.4 This report outlines the methods used (Chapter 2), presents the results obtained (Chapter 3), and sets out the conclusions reached (Chapter 4).

2 Methodology

Desk Study

Search Area

- 2.1 A search area of 2km from the site was used to gather records of most protected and notable species and details of statutory and non-statutory wildlife sites. A wider search area of 5km from the site was used to gather details of statutory wildlife sites and records of bats and otters as these were considered more sensitive receptors which could potentially be affected by activity at a greater distance away or because they are highly mobile species which can utilise habitat a long way from where they have been recorded. The search area is shown on Figure 1.

Data Request

- 2.2 Letters requesting data on designated wildlife sites and/or species records were sent to the organisations and individuals listed in Table 1. A typical letter is included in Appendix 1.

Table 1 - Organisations and individuals from whom ecology data was requested

Consultee
Natural England
Environment Agency
Thames Valley Environmental Records Centre
Northamptonshire Biological Records Centre
Oxfordshire Bat Group
Northants Bat Group
Northamptonshire Bird Club
Banbury Ornithological Society

- 2.3 In addition to these requests, the 'MAGIC' website¹ was consulted for information on any Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar Sites, National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs). The JNCC website was also consulted for additional details of any SACs, SPAs, and Ramsar Sites.
- 2.4 The legal and conservation status of the species for which records were received was determined using the Spreadsheet of *Conservation Designations for UK Taxa* (JNCC, 2010).

¹ <http://magic.defra.gov.uk/>

Phase 1 Habitat Survey

- 2.5 A Phase 1 Habitat Survey was completed on 10th June 2013 to map all habitats present within the site boundary and to identify any potential for protected or notable habitats or species to be present.
- 2.6 The survey took into account the standard Phase 1 Habitat Survey methodology as set out in the Handbook for Phase 1 Habitat Survey: A technique for environmental audit (JNCC 2010).
- 2.7 The area was surveyed and habitats were mapped onto Ordnance Survey base maps using the JNCC Phase 1 Habitat Survey categories. Target notes were made for features of ecological interest. Habitats potentially suitable for legally protected species were noted, and any signs of such species (e.g. sightings, tracks, dropping, burrows etc.) were recorded.
- 2.8 The results of the Phase 1 Habitat Survey are shown on Figure 6 and key features are highlighted by target notes which are included in Appendix 2. A list of the plant species recorded during the survey is provided in Appendix 3. Plant species names follow Stace (2010).

3 Results

Desk Study

Consultation Responses

3.1 The responses received from the consultees are summarised in Table 2 below.

Table 2 - Responses received from consultees

Consultee	Response
Natural England	Advised that they do not routinely hold detailed information on the distribution of species and habitats. Advised that information on statutory designated sites could also be gathered from the Nature on the Map and MAGIC websites.
Environment Agency	Advised that they exchange data with TVERC, who should have all their records.
Thames Valley Environmental Records Centre (TVERC)	Provided protected and notable species records and information on statutory and non-statutory designated sites.
Northamptonshire Biological Records Centre	Provided protected and notable species records and information on statutory and non-statutory designated sites.
Oxfordshire Bat Group	Advised that they do not hold data for the search area.
Northants Bat Group	Provided protected and notable bat species records.
Northamptonshire Bird Club	Provided protected and notable bird species records.
Banbury Ornithological Society	Provided protected and notable bird species records.

3.2 The data received from the consultees concerning wildlife sites and protected and notable species records is summarised below.

Statutory designated sites

3.3 There are no statutory designated sites within the 5km search area.

Non - Statutory designated sites

3.4 There are a total of four non-statutory designated sites within the 2km search area. These are listed in Table 3 below and shown on Figure 1.

Table 3 – Non-Statutory designated sites within 2km of the site

Site Name	Designation	Distance to site	Description
Adderbury Lakes	Local Nature Reserve	2km	A nature reserve that provides a haven for wildlife in and around the two lakes. A wide range of native flora and fauna.
River Cherwell	County Wildlife Site	2km	Forms the Northamptonshire county border. A good variety of marginal species along the river banks, providing habitats for aquatic species. The surrounding low lying fields flood in winter to provide over 1000 hectares of habitat for wintering birds.
Warkworth Hall Farm Pastures	County Wildlife Site	2km	Small pastures with ponds.
The Saltway	Local Wildlife Site (proposed)	2km	An ancient road which is still used as a bridle path with species rich hedgerows. White – letter hairstreaks were recorded here in 1991.

3.5 There are four non-statutory sites located within the boundary of the Cotefield Farm site. They are all located just within the 2km search area and comprises of lakes, rivers, small pastures and a species rich hedgerow bridle path.

Records of Protected and Other Notable Species

3.6 Protected or notable species refers to any species specially protected or listed under the following legislation:

Protected Species

- The Conservation of Habitats and Species Regulations 2010 (Annex 4) (European Protected Species) (EPS)
- Council Directive 79/409/EEC on the Conservation of Wild Birds (“Birds Directive”) (BDIR);
- Wildlife and Countryside Act 1981 (as amended) (Schedules 1, 5 and 8) (WCA1/WCA5/WCA8);
- The Protection of Badgers Act 1992 (PBA)

Other Notable Species

- The Natural Environment and Rural Communities (NERC) Act 2006. Section 41; Habitats and Species of Principal Importance in England (S41)
- RSPB UK Red or Amber listed birds (Red or Amber)²
- National Red Data Book Species (NT – Near Threatened, VU – Vulnerable)

3.7 Records of protected and otherwise notable species recorded since 2000 provided by the consultees are summarised in the tables below and their locations are shown on Figures 2 to 5.

² Red is the highest conservation priority, where species are globally threatened and needing urgent action. Amber is the next most critical group, which consist of species with unfavourable conservation status in Europe.

Birds

Table 4 - Summary of protected or other notable bird species recorded within 2km of the proposed landfall route

Taxon Name	Common Name	Protected Status
<i>Perdix perdix</i>	Grey Partridge	NERC S.41 Red
<i>Vanellus vanellus</i>	Lapwing	NERC S.41 Red
<i>Cuculus canorus</i>	Cuckoo	NERC S.41 Red
<i>Dendrocopos minor</i>	Lesser Spotted Woodpecker	NERC S.41 Red
<i>Poecile montanus</i>	Willow Tit	NERC S.41 Red
<i>Poecile palustris</i>	Marsh Tit	NERC S.41 Red
<i>Alauda arvensis</i>	Skylark	NERC S.41 Red
<i>Sturnus vulgaris</i>	Starling	NERC S.41 Red
<i>Turdus philomelos</i>	Song Thrush	NERC S.41 Red
<i>Muscicapa striata</i>	Spotted Flycatcher	NERC S.41 Red
<i>Passer montanus</i>	Tree Sparrow	NERC S.41 Red
<i>Motacilla flava</i>	Yellow Wagtail	NERC S.41 Red
<i>Carduelis cannabina</i>	Linnet	NERC S.41 Red
<i>Emberiza citrinella</i>	Yellowhammer	NERC S.41 Red
<i>Emberiza calandra</i>	Corn Bunting	NERC S.41 Red
<i>Tachybaptus ruficollis</i>	Little Grebe	Amber
<i>Milvus milvus</i>	Red Kite	WCA1 BDIR Amber
<i>Falco tinnunculus</i>	Kestrel	Amber
<i>Pluvialis apricaria</i>	Golden Plover	BDIR Amber

Taxon Name	Common Name	Protected Status
<i>Lymnocyptes minimus</i>	Jack Snipe	Amber
<i>Gallinago gallinago</i>	Snipe	Amber
<i>Scolopax rusticola</i>	Woodcock	Amber
<i>Numenius arquata</i>	Curlew	NERC S.41 Amber
<i>Tyto alba</i>	Barn Owl	WCA1 Amber
<i>Apus apus</i>	Swift	Amber
<i>Alcedo atthis</i>	Kingfisher	WCA1 BDIR Amber
<i>Picus viridis</i>	Green Woodpecker	Amber
<i>Hirundo rustica</i>	Swallow	Amber
<i>Delichon urbicum</i>	House Martin	Amber
<i>Phylloscopus trochilus</i>	Willow Warbler	Amber
<i>Passer domesticus</i>	House Sparrow	NERC S.41 Red
<i>Motacilla cinerea</i>	Grey Wagtail	Amber
<i>Anthus pratensis</i>	Meadow Pipit	Amber
<i>Carduelis cabaret</i>	Lesser Redpoll	NERC S.41 Red
<i>Pyrrhula pyrrhula</i>	Bullfinch	NERC S.41 Amber
<i>Emberiza schoeniclus</i>	Reed Bunting	NERC S.41 Amber
<i>Oenanthe oenanthe</i>	Wheatear	Amber
<i>Falco subbuteo</i>	Hobby	WCA1
<i>Turdus viscivorus</i>	Mistle Thrush	Amber
<i>Cygnus cygnus</i>	Whooper Swan	WCA1 BDIR Amber
<i>Anas penelope</i>	Wigeon	Amber

Taxon Name	Common Name	Protected Status
<i>Anas strepera</i>	Gadwell	Amber
<i>Anas crecca</i>	Eurasian Teal	Amber
<i>Anas platyrhynchos</i>	Mallard	Amber
<i>Anas acuta</i>	Pintail	WCA1 Amber
<i>Aythya fuligula</i>	Tufted Duck	Amber
<i>Actitis hypoleucos</i>	Common Sandpiper	Amber
<i>Tringa totanus</i>	Common Redshank	Amber
<i>Larus canus</i>	Common Gull	Amber
<i>Larus fuscus</i>	Lesser Black-backed Gull	Amber
<i>Larus argentatus</i>	Herring Gull	NERC S.41 Red
<i>Larus ridibundus</i>	Black-headed Gull	Amber
<i>Sterna hirundo</i>	Common Tern	BDIR Amber
<i>Columba oenas</i>	Stock Dove	Amber
<i>Sylvia communis</i>	Common Whitethroat	Amber
<i>Locustella naevia</i>	Grasshopper Warbler	NERC S.41 Red
<i>Turdus pilaris</i>	Fieldfare	WCA1 Red
<i>Turdus iliacus</i>	Redwing	WCA1 Red
<i>Luscinia megarhynchos</i>	Common Nightingale	Amber
<i>Prunella modularis</i>	Dunnock	Amber

- 3.8 A total of 60 protected or notable species of bird have been recorded within the search area; these are listed in Table 4 above and shown on Figure 2.
- 3.9 These include 7 species specially protected under the Wildlife and Countryside Act, 5 protected under the Birds Directive and 22 listed under Section 41 of the Natural Environment and Rural Communities Act (2006). All the birds recorded are red or amber listed.

- 3.10 The site is located within grid square 4637, bird species most commonly recorded within this area include Green Woodpecker, Swift, Red Kite and Kestrel

Mammals

Table 5 - Summary of protected bat and otter records within 5km of the site.

Taxon Name	Common Name	Protected Status
<i>Pipistrellus pipistrellus</i>	Pipistrelle bat	EPS WCA5
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	EPS WCA5
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	EPS WCA5 S41
<i>Plecotus auritus</i>	Brown long-eared bat	EPS WCA5 S41
<i>Myotis daubentoni</i>	Daubenton bat	EPS WCA5
<i>Myotis nattereri</i>	Natterer's Bat	EPS WCA5
<i>Myotis mystacinus/ Myotis brandtii</i>	Whiskered/ Brandt's bat	EPS WCA5
<i>Nyctalus noctula</i>	Noctule bat	EPS WCA5 NERC S.41

- 3.11 Seven species of bat were recorded within 5km of the site. The bat species recorded are listed in Table 5 above and the locations of the records are shown in Figure 3.
- 3.12 A number of bat roosts were recorded near King's Sutton, which is approximately 3km east of the site. Species include Pipistrelle, Brown Long Eared and Natterer's Bat.
- 3.13 All bats are European Protected Species and listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Noctule, soprano pipistrelle and brown long eared are also listed under Section 41 of the Natural Environment and Rural Communities Act (2006).

Table 6 - Summary of other notable mammals records within 2km of the site.

Taxon Name	Common Name	Protected Status
<i>Erinaceus europaeus</i>	West European Hedgehog	NERC S.41
<i>Meles meles</i>	Eurasian Badger	PBA
<i>Lutra lutra</i>	European Otter	EPS WCA5

Taxon Name	Common Name	Protected Status
		NERC S.41

- 3.14 Three other mammal species have been recorded within 2km of the site, but all recorded outside the site boundary.
- 3.15 Otters are European Protected Species and listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are also listed under Section 41 of the Natural Environment and Rural Communities Act (2006).

Herptofauna

Table 7 - Summary of Protected and Notable Herptofauna recorded within 2km of the survey site

Taxon Name	Common Name	Protected Status
<i>Triturus vulgaris</i>	Smooth Newt	WCA5
Bufo Bufo	Common Toad	WCA5 NERC S.41
<i>Rana temporaria</i>	Common Frog	WCA5
<i>Natrix natrix</i>	Grass Snake	WCA5 NERC S.41

- 3.16 A total of four protected herptofauna species have been recorded within the search area; these are listed in Table 7 above and are shown on Figure 4.
- 3.17 Grass snakes and smooth newts were recorded within 1km of the site.
- 3.18 All the above species are partially protected under the Wildlife and Countryside Act 1981 (as amended). Common toad and grass snake are also listed under Section 41 of the Natural Environment and Rural Communities Act (2006).

Invertebrates

- 3.19 No notable invertebrate species were recorded within the 2km search area.

Flora

Table 8 - Summary of Notable Plant Species recorded within 2km of the survey site

Taxon Name	Common Name	Protected Status
<i>Hyacinthoides non-scripta</i>	Bluebell	WCA8

- 3.20 One protected plant species was recorded within 2km of the site; this is listed in Table 8 above and shown on Figure 5.

Phase 1 Habitat survey

Site Overview

- 3.21 The development site lies within Cotefield Farm in Bodicote, Oxfordshire, and the site covers approximately 5.5 hectares. Approximately 3.9ha of that site is in arable use, the remainder is made up of mixed-leaf woodland/amenity grassland areas.
- 3.22 There is a residential area to the north of the site and a garden nursery to the north-east comprising of glasshouse buildings, polytunnels hardstanding and amenity grassland.

Phase 1 Habitat Survey

- 3.23 The habitats found within the site boundary and adjacent to the site are described in the section below. A Phase 1 Habitat Survey Plan is included in Figure 6 which shows the habitats which were recorded and uses target notes to highlight features of interest. The target notes are included in Appendix 2.

A1.3.1 Semi-natural mixed woodland

- 3.24 There is a small area of semi-natural broadleaved woodland in the southwest corner of the site. This area comprises of a mixture of large mature trees, semi mature trees and smaller young trees. Species include sycamore *Acer pseudoplatanus*, sweet chestnut *Castanea sativa*, horse chestnut *Aesculus hippocastanum*, hawthorn *Crataegus monogyna*, pine *Pinus sp.*, hazel *Corylus avellana*, ash *Fraxinus excelsior* and holly *Ilex*. The ground flora consists of ivy *Hedera*, cow parsley *Anthriscus sylvestris*, stinging nettle *Urtica dioica*, cleavers *Galium aparine* and lords and ladies *Arum maculatum*. There are numerous piles of brash and logs throughout the wood.

A.1.3.2 Mixed plantation woodland

- 3.25 Large strips of mixed plantation woodland lines the southern and western boundaries of the site and there is a small area along the eastern site boundary. The woodland is immature and it comprises of a mixture of ash, sycamore, oak *Quercus rober*, hazel, cherry *Prunus sp.*, elder *Sambucus sp.*, hawthorn, laurel *Prunus laurocerasus*, holly, rowan *Sorbus sp.*, alder *Alnus glutinosa*, silver birch *Betula pendula*, beech *Fagus sylvatica*, pine, willow *Salix* and fruit trees *Mauls sp.*
- 3.26 The ground flora consists of meadow grass *Poa sp.*, stinging nettle, cow parsley, creeping buttercup *Ranunculus repens*, hogweed *Heracleum sphondylium*, dock, bluebell *Hyacinthoides*, dandelion *Taraxacum*, and wood spurge *Euphorbia amygdaloides*. There are numerous piles of brash and logs throughout the wood.

A3.1 Individual Broadleaved trees

- 3.27 A number of immature oak trees had been planted within the areas of amenity grassland along the eastern edge of the arable field.

3.28 Two large mature trees are located within the arable field a sycamore (TN1) and an oak (TN2).

C3.1 Tall ruderal

3.29 There is a small area of tall ruderal along the eastern boundary of the site. This mainly comprises of meadow grass, common bent *Agrostis capillaris*, upright broome *Bromus erectus*, perennial ryegrass *Lolium perenne* dock *Rumex sp.*, willowherb *Epilobium sp.*, stinging nettle, speedwell *Veronica sp.* cow parsley and ivy.

J1.1 Arable

3.30 The majority of the site comprises of a large arable field. It comprises of bare ground with some additional flora species as it is not currently being farmed. Species found here include creeping buttercup, thistle *Centaurea sp.*, stinging nettle, wild cabbage *Brassica oleracea*, groundsel *Senecio sp.*, common fumitory *Fumaria officinalis*, ground ivy *Glechoma hederacea*, Cress *Lepidium sp.* and dandelion.

J1.2 Amenity grassland

3.31 Amenity grassland is found along the eastern perimeter of the arable field and between the mixed plantation woodland and intact species-poor hedge along the southern boundary. The grassland had recently been mown, but species identified along the unmown edges of amenity grassland comprises of meadow grass, common bent, upright broome, perennial ryegrass, thistle, dock, greater plantain *Plantago major*, daisy *Bellis perrennis*, white clover *Trifolium repens*, dandelion and creeping buttercup.

J2.1.2 Intact species – poor hedge

3.32 Intact species – poor hedges were found along the southern and western boundaries of the arable field lining the plantation woodland. These hedgerows are dominated with hawthorn.

J2.3.2 Species – poor hedge with trees

3.33 A species-poor hedge with trees lines the southern site boundary. Two large mature lime *Tilia europaea* trees (TN3 & TN4) and ten smaller lime trees are located within the hedge.

3.34 There is some ground flora at the base of the hedge which comprises of meadow grass common bent, upright broome, perennial ryegrass, cow parsley and stinging nettle.

Habitats outside the survey area

3.35 The arable field extends north of the site boundary. This area already has planning permission for 82 residential dwellings. Residential gardens lay beyond this arable field and these typically comprise of amenity grassland and ornamental planting.

3.36 A garden centre, warehouse and Cotefield House lie to the east of the site and these areas comprise of amenity grassland, immature planted trees, hardstanding and buildings.

- 3.37 Other arable fields lie to the southern and western site boundaries and a small reservoir lies within 500m of the site to the south.

Potential for protected and notable species

Amphibians

- 3.38 There are no water bodies within the site to support amphibians but the site does provide areas of suitable terrestrial habitat. The plantation woodland and hedgerow along the western and southern boundaries provide suitable habitat for amphibians, including great crested newts. There is a reservoir 350m to the south west of the site, however from previous surveys it was deemed unsuitable for newts due to its design and the presence of carp. This is still applicable and no further action will be required (RPS 2010).
- 3.39 Although there is suitable terrestrial habitat for great crested newts on site there are no suitable waterbodies within 500m of the site, so it is unlikely that great crested newts will be utilising the site.

Bats

- 3.40 A preliminary bat roost assessment was undertaken to determine whether any of the trees, within the site boundary had features for bat roost potential.
- 3.41 The large mature sycamore (TN1) to the north of the arable field has five relatively large scars with some small holes, which may provide access for roosting bats, although a couple of these are facing upwards and are exposed. There is also a small patch of ivy on the trunk. This tree was categorised as having LOW bat roost potential.
- 3.42 The large mature oak (TN2) to the south of the arable field has a large scar with a small crack, likely too small for bats. There are also small splitting and peeling limbs higher up in the canopy. There are other smaller scars, but these had no gaps. This tree was categorised as having LOW bat roost potential.
- 3.43 The two large lime trees (TN3 & TN4) within the intact species poor hedge along the southern site boundary have dead thick ivy roots and some small holes and splitting bark in small limbs high up in the canopy. It was difficult to assess bat roost potential due to the dense foliage but these trees were categorised as having LOW bat roost potential. However, if they are being removed as part of the development proposals further investigation of these trees would be required.
- 3.44 The semi natural woodland in the south west corner of the site contained several semi mature trees which were categorised as having either NO or LOW bat roost potential, as they were in relatively good condition with some small holes or ivy cladding. Due to the dense foliage of some trees within the woodland it was difficult to assess their level of potential and further investigation will be required if they are being removed as part of the development proposals.

- 3.45 There is a large mature horse chestnut tree (TN5) located in the southwest corner of the mixed semi natural woodland. There is quite a bit of deadwood and lots of splitting bark and holes at the ends of small limbs high up in the canopy. This tree was categorised as having MEDIUM bat roost potential.
- 3.46 The semi mature mixed woodland, the mixed plantation woodland and hedgerows along the southern and western field and site boundaries provide suitable foraging areas and commuting routes for bats and should be retained, where possible, within the development design proposals.
- 3.47 UK bat species are European Protected Species (EPS) protected under the Habitats Regulations 2010 and Wildlife and Countryside Act 1981 (as amended). Some species are also listed as UK BAP Priority Species. Any works that could potentially affect a bat or its roost can only be conducted under a licence required in advance from Natural England.

Birds

- 3.48 All the trees on site and within the mixed semi mature woodland, the mixed plantation woodland provide suitable nesting habitat for breeding birds. The species poor hedgerows also provide suitable habitat for nesting birds.
- 3.49 All wild birds are protected at a European level under the EC *Directive on the Conservation of Wild Birds* 1979 (79/409/EEC) (the Birds Directive). All species of wild bird in the UK (other than a few pest species) are given general protection under Part 1 Section 1(1) of the Wildlife and Countryside Act 1981 and birds listed under Schedule 1 of the Act are further protected.

Invertebrates

- 3.50 The majority of the site is arable farmland which does not support a diverse or important assemblage of invertebrates, but the hedgerows and trees provide nectar, pollen, seeds and berries which can be utilised by and support a variety of common invertebrates.
- 3.51 There are also a number of log and brash piles within the plantation woodland which are likely to be a valuable resource to invertebrates.

Reptiles

- 3.52 Areas of suitable habitat for common reptiles are limited to the hedgerows along the southern and western field boundaries and these areas are considered to be relatively low value because they are well maintained and provide a relatively small area of habitat in an otherwise unsuitable landscape.
- 3.53 The four common reptile species native to Britain are partially protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill or injure any of these species. In addition, the legalisation places an obligation on developers to take reasonable precautions to avoid incidental mortality or injury of reptiles during site works.

Potential for protected and notable habitats

3.54 No habitats listed under Annex 1 of the Habitats Directive are present within the site boundary.

4 Conclusions

Desk Study

- 4.1 The Desk study identified no statutory site designations and 4 non-statutory site designations within 2km of the site, one of which is proposed. They are all located just within the 2km search area and comprises of lakes, rivers, small pastures and a species rich hedgerow bridle path.
- 4.2 The desk study also identified a number of records of protected and notable fauna. Records were provided for 7 bat species within 5km of the site and a number of additional bat records were provided which were not identified to species level. A number of bat roosts were recorded near King's Sutton, which is approximately 3km east of the site. Species include Pipistrelle, Brown Long Eared and Natterer's Bat.
- 4.3 
- 4.4 A total of 60 species of bird, 4 herptofauna, and one plant were recorded within 2km of the site. Bird species most commonly recorded closest to the site include Green Woodpecker, Swift, Red Kite and Kestrel.
- 4.5 A precise grid reference was not provided for the location of a number of records so it was not possible to determine how near to the site these species had been recorded.
- 4.6 The land at Cotefield Farm, Bodicote has the potential to support protected and notable birds, bats, mammals, herptofauna, invertebrates and plant species, which were identified during the desk study, but none were recorded on site at during the survey visit.

Phase 1 Habitat Survey

- 4.7 The Phase 1 Habitat Survey identified that the survey area at Cotefield Farm consists predominately of arable farmland bordered by hawthorn dominated hedgerows and a mixed plantation woodland. An area of semi mature mixed woodland is located in the southeast corner of the site.
- 4.8 A variety of trees and scrubs are present on site, within the hedgerows and the semi mature and mixed plantation woodland.
- 4.9 All of the trees on site provide suitable nesting habitat for breeding birds.
- 4.10 The hedgerows and trees provide nectar, pollen, seeds and berries which can be utilised by and support a variety of common invertebrates.
- 4.11 The hedgerows and mixed plantation woodland along the southern and western boundaries and the semi mature woodland in the southeast corner of the site provide suitable terrestrial

habitat for amphibians and reptiles and provide suitable foraging areas and commuting routes for bats.

- 4.12 A mature horse chestnut tree within the semi mature mixed woodland has MEDIUM bat roost potential. Other trees within this woodland may provide suitable roosting spaces but further investigation will be required.
- 4.13 The arable farmland and amenity grassland are of less ecological value and are unlikely to support any protected or notable species.

Recommendations

- 4.14 It is recommended that further ecological surveys are carried out on site in order to determine the extent to which legally protected fauna are present. These recommended surveys are discussed below.

Bats

- 4.15 A mature horse chestnut tree within the semi mature mixed woodland to the southeast of the site was identified as having a MEDIUM bat roost potential. If this tree is to be removed as part of the development proposals it is recommended that evening emergence and dawn swarming surveys are conducted to identify whether the tree is being used by bats as a roost.
- 4.16 As the woodland and hedgerows provide suitable foraging areas for bats, it is recommended that an activity survey should be undertaken to gain an understanding of how bats use the site, if these are not being retained in the development proposals.
- 4.17 The results of the bat surveys can be used to design appropriate mitigation measures to ensure that bats are not disturbed or harmed by the proposed development. The results would also be used in an application for a Natural England license if one was required.
- 4.18 The surveys should follow the guidelines outlined in the Bat Conservation Trust's Bat Survey Good Practice Guidelines (2012) and can be undertaken from April to September when bats are active.
- 4.19 It is recommended that the all mature trees, the area of semi natural mixed woodland, the mixed plantation woodland and the boundary hedgerows are retained as part of the future plans for the site to reduce any potential impacts on bats.
- 4.20 Lighting levels should not be increased to levels greater than current levels along the southern and western boundaries of the site and the placement of artificial lights should be avoided, if possible, as artificial lighting can impact on the behaviour of foraging bats.

Birds

- 4.21 Any vegetation which provides suitable nesting habitat for birds, such as scrub, trees and hedgerows, should be cleared outside of the bird nesting season. The clearance works will need to be undertaken between October and mid-February to ensure nesting birds are not

disturbed. If any works are required during the bird breeding season the vegetation must be checked by an ecologist prior to works commencing to ensure no active birds' nests will be disturbed. If an active nest is present, the nest and vegetation within 5m of it will be retained until the young birds have fledged.

Invertebrates

- 4.22 Where practicable, any valuable invertebrate habitat should be conserved within the proposals for the site. The log and brash piles within the plantation woodland and the other trees and hedgerows are a valuable resource and these should be retained or recreated on the site.

5 References

- Bat Conservation Trust (2012) *Bat Survey Good Practice Guidelines*. 2nd Ed. BCT, London.
- BRIG (2008) *UK Biodiversity Action Plan; Priority Habitat Descriptions. Hedgerows*. Available from: <http://www.jncc.gov.uk/page-5155> [accessed September 2012]
- BRIG (2008) *UK Biodiversity Action Plan; Priority Habitat Descriptions. Traditional Orchards*. Available from: <http://www.jncc.gov.uk/page-5155> [accessed September 2012]
- Eaton et al (2009) *Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man*. British Birds 102, pp296-341
- Gent, T. & Gibson, S. (1998) *Herpetofauna Workers' Manual*. Joint Nature Conservation Committee, Peterborough.
- HMSO (2010) *The Conservation of Habitats and Species Regulations 2010*. London HMSO
- HMSO (1981) *The Wildlife and Countryside Act 1981 (as amended)*. London HMSO
- JNCC (2010) *Conservation Designations Spreadsheet*. Peterborough, JNCC
- JNCC, (2010). *Handbook for Phase 1 Habitat Survey. A Technique for Environmental Audit*. JNCC, Peterborough.
- MAGIC (2012). *Statutory Designated Site and Ordnance Survey map information*. Available from www.magic.gov.uk [accessed June 2013]
- RPS (2010). *Cotefield Farm, Bodicote Phase 1 Habitat Survey*
- Stace C. (2010). *New Flora of the British Isles*. Cambridge University Press, Cambridge.

Figures

Figure 1: Non-statutory Designated Sites



Legend

- Site boundary
- 2km Study Area
- Non-statutory designations
 - Local Nature Reserve (LNR)
 - Local Wildlife Site (LWS)
 - Potential Local Wildlife Site (pLWS)

Rev:	Date:	Amendment:	Name:	Checked:

■ Data Source: RPS 2013
 Status: --

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Title: Non Statutory Site Designations

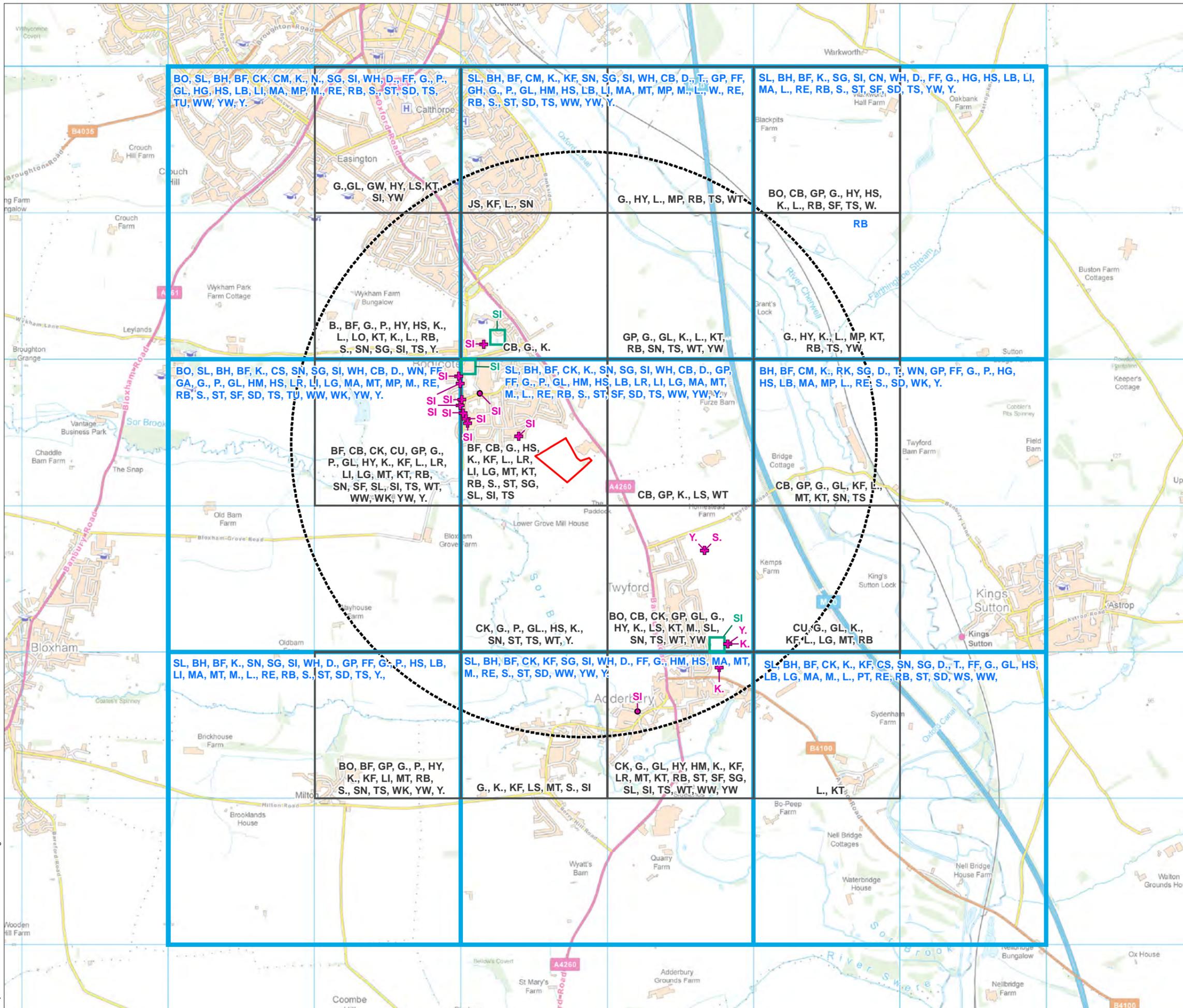
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 Drawn: LM Checked: - Job Ref: OXF7993

■ Figure No: **1** Revision: .

Project Ref: O:\9983 Cotefield Farm 2\Tech\Drawings\7993-0003-01.mxd Date Saved: 03/07/2013

Figure 2: Bird Records



Legend

- Site boundary
- 2km Study Area
- Records accurate to 1m
- + Records accurate to 10m
- Records accurate to 100m
- Records accurate to 1km
- Records accurate to 2km

Name	Code	Name	Code
Barn Owl	BO	Lesser Black-backed Gull	LB
Blackbird	B.	Lesser Redpoll	LR
Black-headed Gull	BH	Lesser Spotted Woodpecker	LS
Bullfinch	BF	Linnets	LI
Common Gull	CM	Little Grebe	LG
Common Nightingale	N.	Mallard	MA
Common Redshank	RK	Marsh Tit	MT
Common Sandpiper	CS	Meadow Pipit	MP
Common Tern	CN	Mistle Thrush	M.
Common Whitethroat	WH	Pintail	PT
Corn Bunting	CB	Red Kite	KT
Cuckoo	CK	Redwing	RE
Curlew	CU	Reed Bunting	RB
Duncock	D.	Skylark	S.
Eurasian Teal	T.	Snipe	SN
Eurasian Wigeon	WN	Song Thrush	ST
Fieldfare	FF	Spotted Flycatcher	SF
Gadwall	GA	Starling	SG
Golden Plover	GP	Stock Dove	SD
Grasshopper Warbler	GH	Swallow	SL
Green Woodpecker	G.	Swift	SI
Grey Partridge	P.	Tree Sparrow	TS
Grey Wagtail	GL	Tufted Duck	TU
Herring Gull	HG	Wheatear	W.
Hobby	HY	Whooper Swan	WS
House Martin	HM	Willow Tit	WT
House Sparrow	HS	Willow Warbler	WW
Jack Snipe	JS	Woodcock	WK
Kestrel	K.	Yellow Wagtail	YW
Kingfisher	KF	Yellowhammer	Y.
Lapwing	L.		

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Project: Cotterfield Farm, Bodicote

Title: Bird Records

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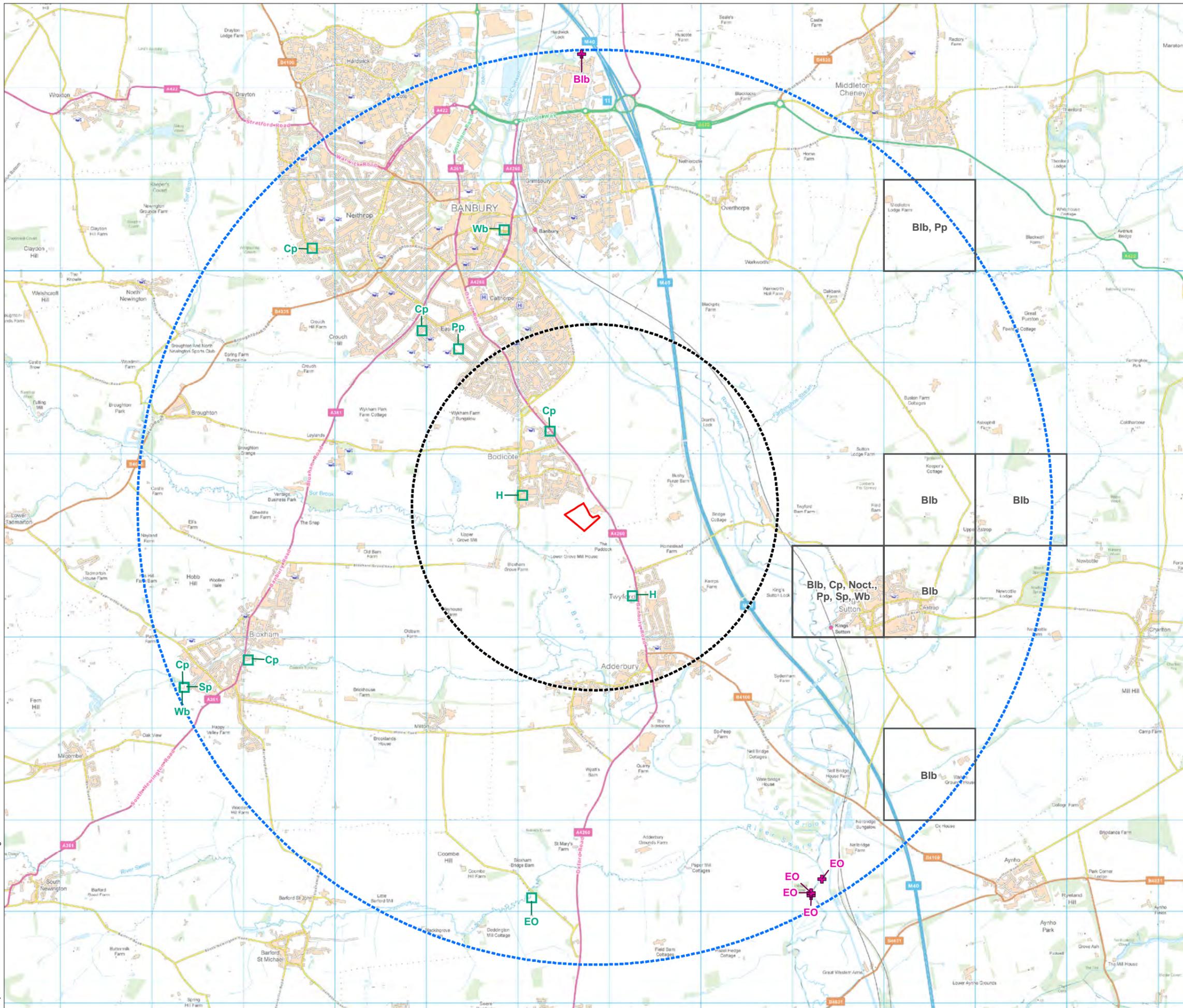
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Date: Jul 2013 Datum: OSGB36 Projection: BNG

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■ Figure No: 2 Revision: .

Figure 3: Mammal Records



- Legend**
- Site boundary
 - 2km study area
 - 5km study area
 - + Records accurate to 10m
 - Records accurate to 100m
 - Records accurate to 1km

Bat Records	
Species	Code
Brown long-eared bat	Blb
Common pipistrelle	Cp
Noctule	Noct.
Pipistrelle	Pp
Soprano pipistrelle	Sp
Whiskered/Brandt's bat	Wb

Other Mammal Records	
Species	Code
European Otter	EO
West European Hedgehog	H

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■ Data Source: RPS 2013

Status: --



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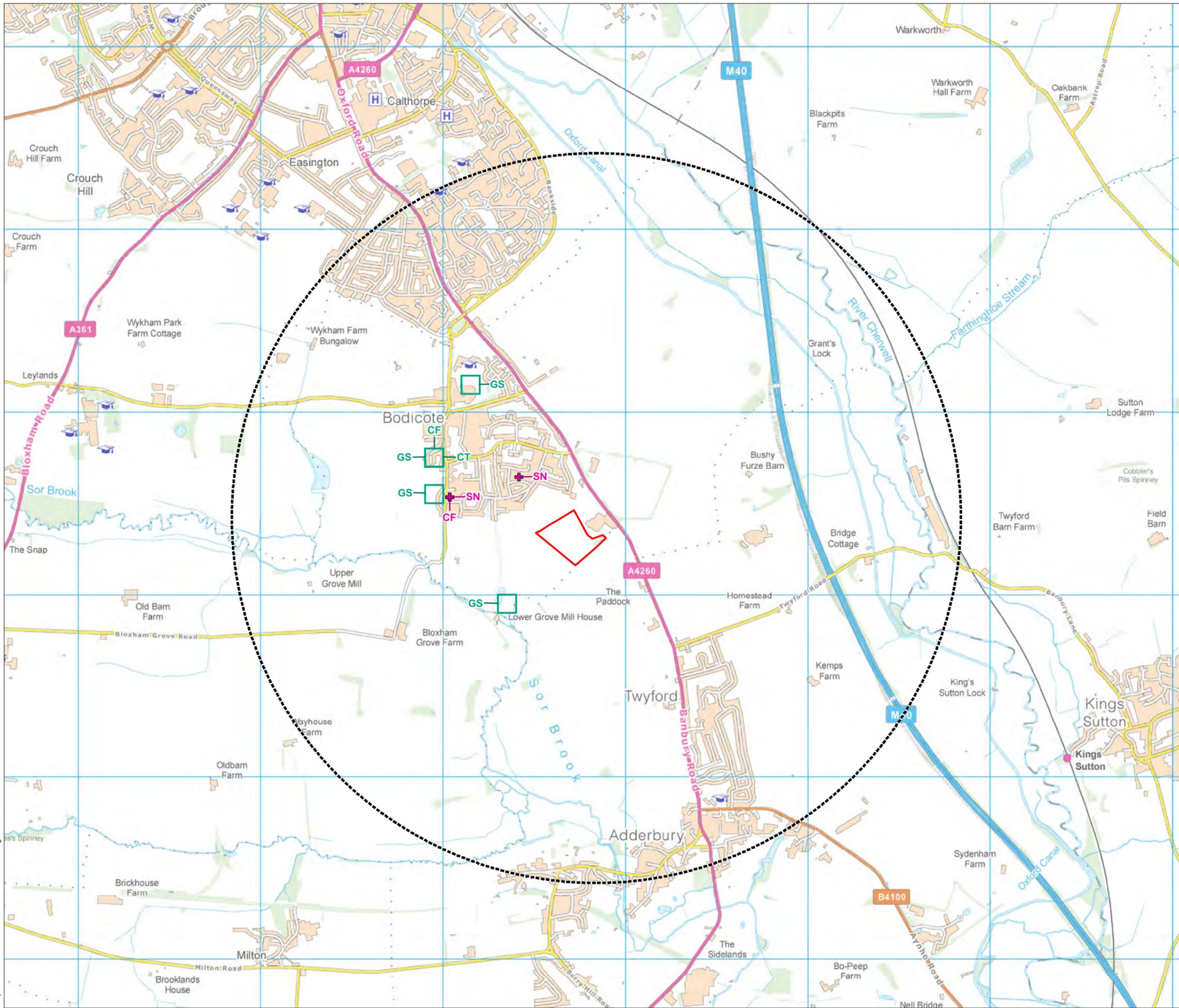
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■ Figure No: **3** Revision: .

Figure 4: Herpetofauna Records



Legend

- Site boundary
- 2km study area
- + Records accurate to 10m
- Records accurate to 100m

Species	Code
Common Frog	CF
Common Toad	CT
Grass Snake	GS
Smooth Newt	SN

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Title: Herpetofauna Records

Scale: A3 @ 1:20,000
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■ Figure No: **4** Revision: .

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Figure 5: Plant Records



Legend

- Site boundary
- 2km study area
- + Record accurate to 10m

Species	Code
Bluebell	BB

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Title: Plant Records

Scale: A3 @ 1:20,000
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Date: Jul 2013 Datum: OSGB36 Projection: BNG
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■ Figure No: **5** Revision: .

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Figure 6: Phase 1 Habitat Survey



Legend

- Site boundary
- A Amenity grassland
- A Arable
- Mixed plantation woodland
- Semi-natural mixed woodland
- Tall ruderal
- Intact species poor hedge
- ⊙ Target note
- Tree

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Status: --				
RPS				
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■ Client: --				
Project: Cotefield Farm, Bodicote				
Title: Phase 1 Habitat Survey				
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■ Figure No: 6				Revision: .

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Appendices

Appendix 1: Example data request letter

Our Ref: 7588EA

E-mail: elizabeth.white@rpsgroup.com

Your Ref:

Tel: 01235 821888

Date: 13th June 2013

Environment Agency
enquiries@environment-agency.gov.uk

Dear Sir/Madam,

Baseline Ecological Data Search for an area near Cotefield Farm, Bodicote, Oxfordshire

RPS has been asked to carry out an ecological and nature conservation study for the above named area, which is centred at National Grid Reference. As part of this study we are required to consult statutory and non-statutory bodies to obtain relevant baseline data. Therefore, we are writing to you to request information you may hold on records of:

- Bat and otter records within 5km of the study area*
- Other protected or notable species records within 2km of the study area*
- Statutory designated sites within 5km of the study area*
- Non-statutory designated sites within 2km of the study area*
- or any other pertinent data or information that you may hold

**The study area is indicated on the enclosed plan.*

We are particularly interested in records you hold post 2000.

Please note that I have also contacted Thames Valley Environmental Records Centre, Northamptonshire Biodiversity Records Centre, Oxfordshire Bat Group, Northants Bat Group and Natural England and so I am particularly interested in any data you may be able to provide that these organisations do not hold.

RPS would be happy to reimburse any reasonable costs incurred but would ask you to contact us in the first instance so that any costs can be approved in writing.

If you require any further information or clarification, please do not hesitate to contact me on 01235 821888 or via email to elizabeth.white@rpsgroup.com. We look forward to hearing from you.

Yours faithfully,
for RPS

Elizabeth White
Ecologist

Enc. Site location plan.

Appendix 2: Phase 1 Target Notes

Target Note Number	Note
1	Large mature sycamore tree within arable farmland categorised as having LOW bat roost potential.
2	Large mature oak tree within arable farmland, categorised as having LOW bat roost potential
3	Large mature lime tree within species poor hedge, categorised as having LOW bat roost potential
4	Large mature lime tree within species poor hedge, categorised as having LOW bat roost potential
5	Large mature horse chestnut tree, within semi mature mixed woodland categorised as having MEDIUM bat roost potential

Appendix 3: Species list

Common Name	Scientific Name
Alder	<i>Alnus glutinosa</i>
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Bluebell	<i>Hyacinthoides</i>
Cherry	<i>Prunus</i>
Cleavers	<i>Galium aparine</i>
Creeping buttercup	<i>Ranunculus repens</i>
Common Bent	<i>Agrostis capillaris</i>
Common fumitory	<i>Fumaria officinalis</i>
Cow Parsley	<i>Anthriscus sylvestris</i>
Cress	<i>Lepidium sp.</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum officinale</i>
Dock	<i>Rumex sp.</i>
Elder	<i>Sambucus sp.</i>
Fruit Trees	<i>Malus sp.</i>
Greater Plantain	<i>Plantago major</i>
Groundsel	<i>Senecio sp.</i>
Ground Ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex</i>
Horse Chestnut	<i>Aesculus hippocastanum</i>
Ivy	<i>Hedera</i>
Laurel	<i>Prunus laurocerasus</i>
Lime	<i>Tilia europaea</i>
Lords and Ladies	<i>Arum maculatum</i>
Meadow Grass	<i>Poa sp</i>
Oak	<i>Quercus</i>
Pine	<i>Pinus sp.</i>
Perennial rye grass	<i>Lolium perenne</i>
Silver Birch	<i>Betula pendula</i>
Rowan	<i>Sorbus sp.</i>
Speedwell	<i>Veronica sp.</i>
Stinging Nettle	<i>Urtica dioica</i>
Sweet Chestnut	<i>Castanea sativa</i>
Sycamore	<i>Acer pseudoplatanus</i>
Thistle	<i>Centaurea sp.</i>
Upright Broome	<i>Bromus erectus</i>
White clover	<i>Trifolium pratense</i>
Wild Cabbage	<i>Brassica oleracea</i>
Willow	<i>Salix sp.</i>
Willowherb	<i>Epilobium sp.</i>
Wood Spurge	<i>Euphorbia amygdaloides</i>