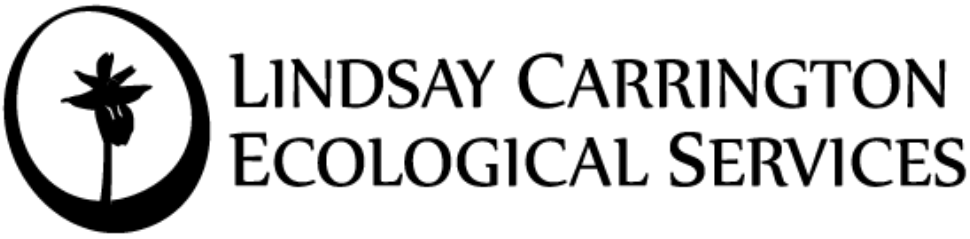


ECOLOGICAL APPRAISAL & PHASE 2 SURVEY REPORT
LAND OFF RINGWOOD ROAD
ALDERHOLT
FORDINGBRIDGE
DORSET
SP6 3DF

NOVEMBER 2019

ON BEHALF OF INTELLIGENT LAND

LINDSAY CARRINGTON
ECOLOGICAL SERVICES

The Old Squash Court,
Rempstone Hall,
Rempstone,
Corfe Castle,
Wareham,
Dorset,
BH20 5JQ
www.ecological-services.co.uk

Telephone: 01929 477115
E-mail: aimee@ecological-services.co.uk

Authorisation

	Name	Date	Signature
Report prepared by:	Aimee Cokayne	29.11.19	[redacted]
Report checked by:	Lindsay Carrington	29.11.19	[redacted]

The contents of this report were correct at the time of the last survey visit. The report is provided for the sole use of the named client and is confidential.

CONTENTS

SUMMARY

1. Lindsay Carrington Ecological Services Limited were commissioned by Intelligent Land Ltd to conduct an ecological appraisal and subsequent phase 2 protected species surveys on the land at Alderholt, Dorset (central Grid Reference: SU 11929 11933). The site is composed of three different farms: Oak Tree Farm, Sleepbrook Farm and Warren Park Farm, which are referred to throughout the report in order to aid descriptions of locations within the site. The site is being promoted for development through the review of the East Dorset Core Strategy.

2. An ecological appraisal is essentially a multi-disciplinary walk-over survey and was conducted with the objective of identifying any ecological constraints associated with the proposals such as the site's potential to support any legally protected species or habitats of high nature conservation value.

3. The site comprised arable and improved grassland with areas of tall ruderal, broadleaved woodland, hedgerows, scrub, ephemeral vegetation, ponds and semi-improved grassland.

4. Cranborne Common Site of Special Scientific Interest, which is part of the Dorset Heathlands Special Protection Area and Ramsar and the Dorset Heaths Special Area of Conservation, is located 200 metres to the west of the site. The site is also within the zone of influence of the New Forest Special Protection Area, Ramsar and Special Area of Conservation. Ringwood Forest, a Site of Interest for Nature Conservation is located on the southern site boundary. Further recommendations have therefore been made in section 5.1.

5. Nineteen mature, species-rich hedgerows are present on site and qualify as UK Biodiversity Action Plan hedgerows. They may also qualify under the Hedgerow Regulations 1997. Further recommendations have been made in section 5.2.

6. The site supports Montbretia (*Crocosmia x crocosmiiflora*) and three-cornered leek (*Allium triquetrum*) which are classified as invasive plant species and listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is a legal requirement to prevent the spread of these species outside the site boundary and removal is advised. Further recommendations have been provided in section 5.3.

7. No active badger setts were recorded on site. However, two latrines and associated mammal paths were noted by a hedgerow on Warren Park Farm. Badgers are therefore using the site for foraging and commuting. Further recommendations are provided in section 5.4.

8. Phase 1 bat surveys were undertaken on six buildings on Oak Tree Farm and four buildings on Sleepbrook Farm. No evidence of bats was recorded in any of the buildings and all ten structures were assessed as holding negligible potential to support roosting bats. No further action is required.

9. The site was assessed as moderate quality foraging habitat for bats. Bat activity transects and static monitoring sessions recorded a total of nine species of bat using the site for commuting and foraging including greater horseshoe bats, an Annex II species. The site is considered to be of regional importance for bats. Further recommendations have been made in section 5.5.

10. Twenty-five bird species were confirmed as breeding on site including three red list species, two amber list species and three UK BAP species. The breeding bird assemblage is considered to be of district importance. Further recommendations have been made in section 5.6.

11. Nightjars were not recorded as breeding on site but were heard churring in more suitable habitat to the south of the site. Further recommendations have been made in section 5.6.

12. Hedgerows and scrub provide suitable habitat for dormice, for which there are previous records within the vicinity of the site. Targeted surveys did not detect this species using the site therefore no further recommendations have been provided.

13. Low non-breeding populations of great crested newts have been recorded in three waterbodies and a breeding population recorded in one waterbody. eDNA, bottle trapping and torching techniques also found the network of ponds on and within 500 metres of the site and surrounding terrestrial habitat to support great crested newts and facilitate their movement across the area. Recommendations have been made in section 5.7.

14. The semi-improved grassland margin, scrub, hedgerows and trees provide suitable foraging opportunities and shelter for reptiles. Reptile surveys recorded low populations of common lizard, slow worm and grass snake in the south-western area of the site, whilst a low population of slow worms was recorded in the north-west. Reptile habitat should be retained in the south-western part within any design proposals and is currently proposed as a Suitable Alternative Natural Greenspace. Further recommendations have been made in section 5.8.

15. Recommendations for ecological enhancements to the site have been provided in section 5.9 including provision of habitat for birds and bats.

1.0 INTRODUCTION

Lindsay Carrington Ecological Services Limited were commissioned by Intelligent Land Ltd to conduct an ecological appraisal and subsequent phase 2 protected species surveys at land at Alderholt, Dorset (central Grid Reference: SU 11929 11933). The site is composed of three different farms: Sleepbrook Farm to the north which is directly adjacent to Warren Park Farm in the south; and Oak Tree Farm to the east which is separated from the other two farms by a small road (Ringwood Road). The names of the farms are used throughout the report to aid descriptions of specific habitats and locations. Site maps have been provided in appendices II toV.

The site is currently being promoted for development through the review of the East Dorset Core Strategy and as such there are currently no detailed proposals, although a preliminary plan to outline the nature of the scheme has been provided in appendix I. The report therefore, provides the results of surveys that have already taken place, general recommendations and information on further surveys for all potential protected species present or habitats of high nature conservation value that may be required in the future.

An ecological appraisal is essentially a multi-disciplinary walk-over survey and was conducted with the objective of identifying any ecological constraints associated with any potential proposals such as the site's potential to support any legally protected species or habitats of high nature conservation value.

The following targeted protected species surveys were also conducted due to the presence of suitable habitat on the site:

- Badger (*Meles meles*) survey
- Bat activity transects including static monitoring
- Breeding bird survey
- Nightjar (*Caprimulgus europaeus*) survey
- Dormouse (*Muscardinus avellanarius*) survey
- Great crested newt (*Triturus cristatus*) survey
- Reptile survey.

Section 2 of the report provides some background information on legislative requirements and relevant policy. Section 3 details the methodologies adopted for the ecological surveys that were conducted and section 4 provides an account of the survey results. Section 5 provides information on the relevance of the results to a potential development and makes recommendations on particular habitats or protected species.

2.0 LEGISLATION AND POLICY

2.1 Legislation

The following legislation may be of relevance to the proposed works. Full details of statutory obligations with respect to biodiversity and the planning system can be found in DCLG Circular 06/2005.

- **The Conservation of Habitats and Species Regulations 2017:**
  This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into domestic law. The Regulations provide protection for a number of species including:
  - All species of bat;
  - Dormouse, and
  - Great crested newt.

  This legislation makes it an offence to deliberately capture, kill or injure individuals of these species listed on Schedule 2 and damage or destroy their breeding site or place of shelter. It is also illegal to deliberately disturb these species in such a way as to be likely to significantly affect: (i) the ability of any significant group of the species to survive, breed or rear or nurture their young; or (ii) the local distribution or abundance of the species[1];

  This legal protection means that where development has the potential to impact on bats, or other European protected species, the results of a protected species survey must be submitted with a planning application.

  Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are also protected under this legislation. These are a network of sites designated for supporting habitats or species of high nature conservation importance in the European context. Any activity that has a detrimental effect on these European sites is made an offence under the Regulations. Where a development is likely to have a significant impact on a European site, the Regulations require a rigorous assessment of the impacts, known as an Appropriate Assessment.

[1] The *Conservation of Habitats and Species Regulations 2017* consolidates the numerous amendments that were made to the *Conservation (Natural Habitats, &c.) Regulations 1994*. Of particular relevance are amendments made in August 2007 and January 2009 which an increased the threshold of illegal levels of disturbance to European Protected Species (EPS). An offence is only committed if the deliberate disturbance would result in significant impacts to the EPS population. However, it should be noted that activities that cause low levels of disturbance to these species continue to constitute an offence under *Section 9* of the *Wildlife and Countryside Act* (*1981)*..

- **The Wildlife and Countryside Act 1981 (and amendments):** Protected fauna and flora are listed under Schedules 1, 5 & 8 of the Act. Species likely to be of relevance include:
    - All species of **bat.** It is an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost;
    - All species of British **reptile** (in particular grass snake (*Natrix natrix*), common lizard (*Zootoca vivipara*), adder (*Vipera berus*) and slow-worm (*Anguis fragilis)).* It is illegal to kill or injure these species; and
    - **Great crested newt.** It is illegal to obstruct access to any structure or place which great crested newts use for shelter or protection or to disturb any great crested newt while it is using such a place.
    - **Water vole.** It is an offence to intentionally kill, injure or take water vole (*Arvicola amphibius*), intentionally or recklessly damage, destroy, obstruct access to water vole burrows or disturb them whilst in a burrow.

  This Act also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built). In addition, it is an offence to disturb any nesting bird listed on Schedule 1 or their young.

  Schedule 9 of the Act lists those species for which it is an offence to cause their spread. Schedule 9 species that are most likely to be encountered are Japanese knotweed (*Fallopia japonica*) and New Zealand pigmy weed (*Crassula helmsii*).

  Sites of Special Scientific Interest (SSSIs) are also protected under the Wildlife and Countryside Act 1981. These are a network of sites identified as being of national nature conservation importance and hence afforded legal protection.

- **The Countryside and Rights of Way Act 2000:** This Act strengthens nature conservation and wildlife protection. It places a duty on Government Ministers and Departments to conserve biological diversity, provides police with stronger powers relating to wildlife crimes, and improves protection and management of SSSIs.

- **The Protection of Badgers Act 1992:** This Act makes it an offence to wilfully take, injure or kill a badger (*Meles meles*); cruelly mistreat a badger; interfere with badger setts. A licence is required for work which may damage or disturb a sett.

- **Wild Mammals (Protection) Act 1996:** This Act provides protection for all wild animals from intentional acts of cruelty.

- **Hedgerow Regulations 1997:** These Regulations establish a set of criteria for assessing the importance of hedgerows. Where a hedgerow is deemed to be 'important' its removal is prohibited without consent from the local Planning Authority

2.2 Policy

The following policy is of relevance to the proposed works:

National Planning Policy Framework (NPPF): This sets out the Government's vision for biodiversity in England with the broad aim that planning, construction, development and regeneration should maintain and enhance, restore or add to biodiversity and geological conservation interests. NPPF (2018) includes sections on legally protected species and sites in section 15(2) (see section 2.1).

- **Local Sites (including Sites of Nature Conservation Interest (SNCIs), Local Nature Reserves (LNR), and Biological Notification Sites (BNSs)/County Wildlife Sites (CWSs)):** These are a network of sites designated for their nature conservation importance in a local context. Although they are not afforded legal protection they contribute towards local and national biodiversity. Where such development is permitted, the local planning authority will use conditions and/or planning obligations to minimise the damage and to provide compensatory and site management measures where appropriate.

- **Biodiversity Action Plans (BAPs):** BAPs set out policy for protecting and restoring priority species and habitats as part of the UK's response as signatories to the Convention on Biological Diversity. BAPs operate at both a national and local level with priority species and habitats identified at a national level and a series of Local BAPs that identify ecological features of particular importance to a particular area of the country. The requirement to consider and contribute towards BAP targets was strengthened through the Countryside and Rights of Way Act 2000. Habitat and Species Action Plans that are likely to be of relevance include:

    - Great crested newt (UK BAP)
    - Reptiles (UK BAP)
    - Brown long-eared bat (*Plecotus auritus*) (UK BAP)
    - Soprano pipistrelle (*Pipistrellus pygmaeus*) (UK BAP)
    - Hedgehog (*Erinaceus europaeus*) (UK BAP)
    - Greater Horseshoe bat *(Rhinolophus ferrumequinum)* (UK BAP)
    - Dunnock (*Prunella modularis*) (UK BAP)
    - House sparrow (*Passer domesticus*) (UK BAP)
    - Mistle thrush (*Turdus viscivorus*) (UK BAP)
    - Song thrush (*Turdus philomelos*) (UK BAP)

3.0 METHODOLOGY

3.1 Desk study

Dorset Environmental Record Centre (DERC) and Hampshire Biological Information Centre (HBIC) provided details of previous records of protected species records and details on non-statutory designated sites within two kilometres of the site. The Multi-Agency Geographical Information for the Countryside (MAGIC) website was used to provide any information statutory designated sites within five kilometres of the proposed development.

3.2 Field study

3.2.1 Vegetation

The standard phase 1 habitat survey methodology (JNCC, 2010) was adopted whereby habitats are mapped using colour codes (see appendix I). A detailed walkover survey was undertaken on 1st and 2nd April 2019 by Andrew Heideman and Elen Lesourd, directly searching for legally protected and invasive species of plant and categorising any habitats of ecological value that were encountered. A general description of the vegetation was also noted, listing species encountered and scoring their abundance using the DAFOR scale:

D Dominant;
A Abundant;
F Frequent;
O Occasional;
R Rare;
L Local (used as a prefix to any of the above).

Limitations

The survey was undertaken on the 1st and 2nd April 2019 which is outside the optimum period for vegetation surveys and therefore some herbaceous species would still have been dormant. This is unlikely to affect the habitat assessment, however, as further surveys will be required for this site in the future, any vegetation surveys will be undertaken within the optimum period.

Access was not granted for the north-east of the site, near the riding school on Sleepbrook Farm (grid reference: SU 1220 1190). Habitat assessment was possible from a nearby vantage point and a list of plant species was recorded but may have been limited due to access issues. However, due to similar habitats and plant species being present across the site it is not expected to affect the overall assessment of habitat and vegetation on site.

3.2.2 Protected species assessment

Badgers

A direct search was undertaken for signs of badger. Signs of badger may include setts, dung pits, latrines, paths or hairs on fences and vegetation. Any setts encountered were recorded and classified according to the number of entrances and the extent of their use.

Where setts were recorded these were classified into four main categories, defined by the number of holes present:

- Main sett: A large well used and well-established sett used for breeding. There is usually only one main sett within each clan of badgers.
- Annex sett: These are additional setts often located close to the main sett connected by well-worn paths.
- Subsidiary sett: These are additional setts often some 150 metres from the main sett which are sometimes used for breeding but do not have obvious paths linking to other setts and are not always active.
- Outlier sett: These setts are usually smaller in size than the other setts, intermittently used and located some distance from the main sett.

Setts recorded were then examined to establish their level of usage. Each hole was classified under one of the following categories:

- Well used: An entrance free of leaf litter and showing recent signs of excavation.
- Partially used: An entrance with some leaf litter and debris around the hole but also showing some signs of recent digging.
- Disused: An entrance with debris and leaf litter partially obscuring the hole with no recent signs of digging, or a hole that exhibits the characteristics of a badger hole with a large D-shaped entrance and old spoil piles at the entrance, but shows no other signs of badger activity.

Bats

Phase 1 bat surveys

Buildings

Bats roost in a wide variety of sites within buildings, with many species roosting in cracks and crevices, within rubble stone or cavity walls, under slates and within timber beam joints where they are difficult to see. Bats often access buildings at key areas such as the gable end, soffits, barge boards, ridge tiles, between double lintels or around window frames.

The presence of roosting bats can be recorded through signs such as accumulations of moth or butterfly wings or bat droppings and staining around potential entrance and exit points. The absence of these cannot, however, be treated as conclusive evidence that bats are not using the buildings. An assessment was therefore also made of the potential of the building to support bats based a scale which is presented in table 1 below.

Table 1: Criteria for assessing bat roosting potential of buildings

Confirmed Roost	Evidence of bat occupation found
High Roosting Potential	With significant roosting potential, either because they contain a large number of suitable features or those features present appear optimal
Medium Roosting Potential	Features with moderate roosting potential, with roosting features appearing less suitable
Low or Negligible Roosting Potential	Buildings with few, if any, features suitable for roosting

A direct search for evidence of bats was therefore conducted on internal and external features of the buildings on Sleepbrook Farm and Oak Tree Farm. The surveys were conducted by Alex Coggins (Class 1 licence no: 2019-39837-CLS-CLS) on the 9th May 2019. Maps of the buildings are provided in appendix VI.

Limitations

Internal access to Building 6 was not possible and internal access into the void of Building 2was not possible due to there not being a loft hatch.

Potential for the rest of site to support roosting, foraging and commuting bats was assessed by Elen Lesourd and Andrew Heideman on the 1st and 2nd April 2019 in accordance with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins *et al*., 2016).

Trees

The site was also assessed for its possibility to support bat roosting in trees. Bats often roost in trees. Features such as old woodpecker holes, splits, cavities and rot holes, loose or flaking bark and ivy creepers will be exploited by bats to roost. Any trees present on site were therefore assessed for their potential to support roosting bats by searching for such features. The presence of roosting bats can be spotted through signs such as accumulations of moth or butterfly wings, staining, bat droppings, or bats themselves. The absence of these cannot, however, be treated as conclusive evidence that bats are not present, and therefore an assessment was made of the potential of the trees to support bats based on the scale presented in table 2 below:

Table 2: Criteria for assessing bat roosting potential in trees

Confirmed Roost	Evidence of bat occupation found
High Roosting Potential	With significant roosting potential, either because they contain a large number of suitable features or those features present appear optimal
Medium Roosting Potential	Features with moderate roosting potential, with roosting features appearing less suitable
Low or Negligible Roosting Potential	Trees with few, if any, features suitable for roosting

Limitations

Detailed inspection of each individual tree was outside the scope of this ecological appraisal, however, where features suitable for bats were observed these were noted. A detailed inspection of trees will be required where the site is taken forward for development.

Foraging/commuting habitat

The habitat on the site was assessed for its potential to support foraging and commuting bat populations, in accordance with the BCT *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins *et al*., 2016). Bats navigate using linear features in the landscape, such as hedgerows, woodland edges and water courses. Habitats including grasslands, scrub, hedgerows, woodlands, heathland and watercourses all provide important foraging habitat which supports populations of various bat species, including rare Annex II species. The assessment of the habitats on site will inform the requirement for further survey work.

Activity transects

A suite of bat activity surveys was undertaken on site in accordance with the guidelines established by the BCT (Collins, 2016).

Bats are generally most active in the months March to September with the optimal months for undertaking transects being June to August. Activity transects were undertaken on the 16th and 30th April, 15th and 30tht May, 11th and 25th June, 9th, 10th and 23rd July, 6th and 20th August and 10th September. The dusk transects surveys began at or just before sunset and continued for approximately two hours afterwards in order to detect bats commuting from roost sites to foraging sites. The dawn surveys commenced two hours before sunrise and continued until sunrise.

Bat transect surveys involve walking pre-defined routes which incorporate key areas that are likely to be important for foraging and/or commuting bats. Such areas include scrub and grassland and linear features such as hedgerows and woodland / scrub edge. In this case the transect routes were walked by two pairs of surveyors. The routes were walked twice per survey at a steady speed incorporating a number of stopping points along the

route. The surveyors paused at each stopping point for durations of five minutes. The transect routes for each survey are provided in appendix VII.

The site has three transect routes split across three sections of the site:

- Eastern Transect – Blue - Oak Tree Farm: This transect covers the eastern part of the site and is located on Oak Tree Farm which comprises arable fields and hedgerows. Part of the transect also includes the eastern area off Warren Park Farm including a small caravan site in a small wooded area and a large arable field.

- Northern Transect – Orange - Sleepbrook Farm: This transect covers the northern part of the site and is located on Sleepbrook Farm. The habitats present include hedgerows and open fields used mainly for grazing horses and cattle. There are small areas of woodland to the north of the site boundary.

- Southern Transect – Green – Warren Park Farm: This transect covers the southern part of the site and is located on Warren Park Farm. The habitats covered comprise hedgerows, improved grassland, ploughed fields, scattered trees and several small ponds. This site is currently a dairy farm and is adjacent to woodland and heathland habitat located to the south of the site.

Bat activity was recorded by each pair of surveyors using a combination of EM3, Echometer touch and a heterodyne (Magenta MKII) bat detector. Visual observations were also used to record flight patterns and feeding behaviour. Notes on times, species and behaviour were also recorded to aid identification to species level. The recordings, which were analysed using, Kaleidoscope software was used to confirm, where possible, the species of bat observed during the survey.

Static Monitoring

Static monitoring devices were deployed on site for a minimum of five nights during April then ten nights in May, June, July, August and September 2019 following the guidelines by the BCT (Collins, 2016). The recording devices consisted of SM2, SM4 and Anabat expresses. The recording devices were set up at the same strategically selected locations around the site on each occasion. As Annex II bat species were known to use the site, three static detectors were placed on each transect. Analysis of the static recording device was conducted using Kaleidoscope Pro software. The static detector locations on site are illustrated on the plan included as appendix IV and described below:

The statics were deployed at the following locations:

- Static Monitor 1 (SU 12376 11887): Located on the orange transect; positioned in treeline to the north east corner of Sleepbrook Farm.

- Static Monitor 2 (SU 11923 11847): Located on the orange transect; positioned in a hedgerow bordering a field to the west of the Sleepbrook Farm hay barns.

- Static Monitor 3 (SU 11733 11762): Located on the orange transect; positioned in treeline adjacent to a ploughed field to the north west of the site.

- Static Monitor 4 (SU 12461 11879): Located on the blue transect; positioned in the hedgerow at the north western corner of the arable field on Warren Park Farm adjacent to Ringwood Road.

- Static Monitor 5 (SU 12954 11637): Located on the blue transect; positioned in small wooded area on the south eastern boundary of the site.

- Static Monitor 6 (SU 12799 11813): Located on the blue transect; positioned in the hedgerow to the south west of the poultry houses on Oak Tree Farm.

- Static Monitor 7 (SU 12680 11857): Located on the green transect; positioned in a small group of trees to east of Warren Farm house.

- Static Monitor 8 (SU 11912 11545): Located on the green transect; positioned in hedgerow north west of Warren Farm cattle sheds.

- Static Monitor 9 (SU 11844 11077): Located on the green transect; positioned in treeline in southern area of Warren Farm on the edge of the woodland to the south.

Assessment of foraging and commuting habitat importance

A methodology for the ecological impact assessment of bats has been developed by Wray *et al.* (2010). This uses a number of factors such as the species and number of bats involved, presence of roosts nearby and characteristics for foraging and commuting habitat to produce a score indicating level of importance. This scoring system has been applied to the foraging area and commuting routes for the site to assess their level of importance. The value of the habitat can be assessed for each of the bat species recorded during the survey, but the highest score (normally obtained for the rarest species) is used when defining the value of the habitat. The scores relate to the following levels of importance:

- 0–10 = not valuable
- 11–20 = locally important
- 21-30 = important at county level
- 31-40 = important at regional level
- 41-50 = nationally important

Limitations and Constraints

On some occasions, the static monitor did not record for the necessary five nights per session, this was due to battery failure or failure of the static monitor. This is not considered a significant constraint as the transect routes run directly past the static monitors and recordings from these transects are considered sufficient to gauge local bat activity levels.

On a few occasions, the static monitors recorded more than five nights data. Table 3. below identifies the number of nights that recorded bat activity for each monitor per month.

Table 3: Static Monitoring nights

	April	May 1	May 2	June 1	June 2	July 1	July 2	Aug 1	Aug 2	Sept 1	Sept 2
SM-1	10	7	5	5	5	4	5	2	6	5	5
SM-2	4	8	6	8	6	6	6	6	7	7	6
SM-3	0	4	4	7	6	6	2	6	7	6	7
SM-4	3	4	5	7	4	8	7	7	5	8	10
SM-5	15	7	5	7	6	5	6	7	8	6	6
SM-6	0	8	3	7	7	6	7	6	0	6	16
SM-7	15	0	5	6	6	6	7	5	0	5	6
SM-8	0	8	0	7	7	4	6	7	8	7	6
SM-9	15	8	6	7	7	4	6	7	8	7	6

Breeding birds

The standard Common Bird Census methodology as developed by Marchant (1983) for the British Trust for Ornithology (BTO) was adopted. A set transect route was followed on five occasions between February and June 2019. Visits to the site were made by experienced ornithologist Alex Coggins on the 19th February 19th March 18th April 30th May and 21st June 2019. Any birds encountered were identified either visually or from

their vocalisations. Birds were noted with standard BTO codes and behaviour[2] was mapped. Following the surveys territory mapping was conducted following the methodology set out in Bibby *et al.* (1992). Territories were determined using the criteria set out in table 4. below.

Table 4: Criteria for determining territories

Breeding status	Registration description
Confirmed breeding territory	Two registrations of a particular species displaying breeding behaviour within a territory range over the total survey period
	A single record of a nest containing eggs or young
	Two registrations of a difficult species (e.g. nocturnal species such as owls or woodcocks) within a territory range over the total survey period
Probable breeding territory	Present in suitable habitat in the same location (within normal territory range) on two occasions
	Displaying breeding behaviour on one occasion only
Possible breeding territory	Present in suitable habitat on one occasion only
Non-breeding	Present in habitat not suitable for breeding
	Immature birds (e.g. herring gull first breeds at 4 years of age)

Weather conditions for the breeding bird surveys have been provided in table 5. below:

Table 5: Weather conditions during the breeding bird surveys

Date	Visit number	Weather conditions
19/02/2019	1	-0.5°C, cloud cover 0/8, wind 0/12
19/03/2019	2	4 °C, cloud cover 6/8, wind 0/12
18/04/2019	3	10°C, cloud cover 8/8, wind 0/12
30/05/2019	4	12°C, cloud cover 2/8, wind 3/12
21/06/2019	5	10°C, cloud cover 5/8, wind 0/12

[2] Breeding behaviour includes displaying, singing, territorial activity, agitated or defensive behaviour, pair of adults together

Evaluation

The breeding bird assemblage on the site was assessed using the criteria set out by Fuller (1980). The adapted scale outlined in the IEEM guidelines (2006) was used which reflects the decline in arable species since Fullers guidelines were originally published.

- Up to 24 breeding species = Local Importance
- 25 – 49 breeding species = District Importance
- 50 – 69 breeding species = County Importance
- 70 – 84 breeding species = Regional Importance
- 85+ breeding species = National Importance

Nightjar

The standard survey technique outlined by Gilbert *et al.* (2011) was followed. A transect was walked to cover the optimum areas for nightjar within the site at dusk. One set route was followed on three occasions on the 11th June, 25th June and 10th July 2019. Surveys were undertaken by experienced ecologists Alex Coggins, Sam Williams, Heidi Staines and Andy Joyce. Any birds encountered were identified either visually or from their vocalisations. Birds were noted and behaviour was mapped.

Table 6: Weather conditions during the breeding bird surveys

Date	Visit number	Time	Weather conditions
11/06/2019	1	21:20	12°C, cloud cover 7/8, wind 2/12
25/06/2019	2	21:26	17°C, cloud cover 3/8, wind 0/12
10/07/2019	3	21:18	17°C, cloud cover 2/8, wind 1/12

Dormice

The habitat on the site was assessed for the potential to support dormice, which are found in habitats such as woodlands, scrub and hedgerows with good connectivity and suitable food plants. Satellite images were used to assess the connectivity of any suitable habitat present on the site to other areas of woodland and hedgerow networks.

A total of 141 tubes were installed across the site in April 2019, the locations of which are shown on the plan provided in appendix XI. The nest tubes were spaced at intervals of approximately 10 to20 metres and positioned on trees or shrubs between 1 and 2 metres from the ground. Nest tubes were suspended by wire underneath horizontal branches or wedged into crevices between branches/ branches and the tree trunk so that the entrance to the tubes pointed slightly downwards (and therefore water would drain away from the nest chamber area).

The nest tubes were inspected on a monthly basis between May and September 2019. Inspections were conducted by experienced surveyors Colin Sutch, Sarah Barker and

Helen Lowe. Each nest tube was inspected for characteristic signs of dormice, including the following:

- Presence of dormice themselves
- Presence of dormouse nests. Typically, these are grapefruit-sized and woven from strips of honeysuckle bark or similar material with whole fresh green leaves incorporated into the outer layers. The nests are spherical and lack an obvious entrance hole.
- Presence of droppings. Typically, these are larger and crinklier compared to droppings of other small rodents. However, identification of faecal pellets is not fully reliable and should not be used to confirm presence of absence of dormice.
- Presence of characteristically gnawed nuts or other hard fruit. Dormice leave a smooth round hole with few tooth marks on the surface.

Any nests or dormice found within the tubes were recorded. Where possible dormice encountered were sexed and age, activity and breeding condition were recorded.

Great crested newts

Suitable breeding ponds are essential to support populations of great crested newt only spend a relatively short period of the year in the ponds during the spring for breeding. The remainder of the year is spent in suitable 'foraging' terrestrial habitat such as tall grassland and woodland. During the winter, the great crested newt hibernates, often amongst the roots of trees and scrub or in places such as piles of rubble, amongst foundations of buildings or under fallen trees and logs.

Great crested newts are known to forage up to at least five hundred metres from their breeding pond and suitable habitats that fall within two hundred and fifty metres must be considered even in situations where the breeding pond itself will not be affected. The site and surrounding area were therefore assessed for the presence of ponds that may provide suitable breeding habitat for great crested newt. Habitats within the site were also assessed for their suitability as terrestrial great crested newt habitat.

Habitat Suitability Index

A Habitat Suitability Index (HSI) assessment was carried out by Elen Lesourd and Andrew Heideman on 2nd April 2019, to determine the suitability of the ponds on site and within 500 metres of the site to support great crested newts. The assessment uses criteria and values as provided by Oldham *et al.,* (2008). HSI cannot be used to predict the presence of great crested newts.

The results are categorised according the following scale:

- <0.5 = poor
- 0.5 – 0.59 = below average

- 0.6 – 0.69 = average
- 0.7 – 0.79 = good
- >0.8 = excellent

eDNA

A technique for surveying great crested newts known as environmental DNA testing (eDNA) was undertaken on 15th April 2019 by Pete Duffy (Natural England Class Licence number: 2016-22153-CLS-CLS), Alex Coggins, Aimee Cokayne (Natural England Class Licence number: 2019-39595-CLS-CLS), Andrew Heideman (Natural England Class Licence number: 2018-36489-CLS-CLS) Alex Sinclair and Katie Ford (Natural England Class Licence number: 2015-13027-CLS-CLS).

This involved taking water samples from twelve waterbodies: W9, W10, W11, W13, W21, W23, W24, W26, W28, W30, W34 and W35., Water samples were sent to SureScreen Scientific for DNA analysis in order to confirm the presence or absence of great crested newt. The locations of the waterbodies are shown on the plan in appendix XII.

Presence / absence surveys

Great crested newt surveys were conducted in accordance with the Great Crested Newt Mitigation Guidelines (English Nature 2001) which recommends that a minimum of three survey techniques are employed, ideally bottle trapping, torch survey and egg search. A description of the survey techniques adopted is provided below:

- Bottle trapping: Bottle traps were set approximately 1 metre apart around the margins of the pond in the early evening and were collected the following morning. The contents of the traps were recorded.
- Torch counts: The water bodies were visited approximately 1 hour after dark and a torch shone into the water. All species of fauna observed were recorded.
- Egg search: Newts lay their eggs in marginal or pond-side vegetation. Where present such vegetation was thoroughly searched. Once great crested newt eggs are found searching will cease.

Presence/absence surveys were carried out on site over six visits between April and June 2019. Surveyors previously mentioned in the eDNA paragraph above, also undertook these surveys.

Limitations

A total of twenty-one waterbodies were identified from aerial photography within 500 metres from the site. The landowners were contacted via letter, telephone and by going door-to-door. Authorisation was given by landowners to access seventeen waterbodies. Permission was not given to survey four ponds to the south of the site.

Some waterbodies dried out during the warmer periods of the year so it was not possible to complete all six of the surveys. Further detail is provided in section 4.2.2.

Additionally, pond W13 was difficult to survey as 80% of the pond is covered by bulrush (*Typha latifolia*) and common reed (*Phragmites australis)*.

Reptiles

Reptiles are widespread in habitats that provide both cover, in the form of scrub or tall vegetation, and basking areas such as areas of hard standing or short grassland communities. Reptiles are a notoriously difficult group to survey due to their secrecy. They do, however, have an affinity for hiding under debris exposed or partially exposed to the sun. This trait is exploited by adopting a methodology based upon placing artificial refuges around the survey site thus encouraging any reptiles present to use them.

In total two hundred and fifty 0.25 metre square pieces of roofing felt, and four 0.5 metre square pieces of tin were laid out in suitable positions in the site field margins. The locations of the reptile mats is shown on the plan in appendix XIII. The reptile mats were distributed across the site on the 5th April 2019 and left to 'settle' for a period of one week before the survey visits commenced. The 'reptile mats' were checked between 0900 and 1100 hours or between 1600 and 1900 hours and/or during suitable weather conditions, cloudy and/or with sunny breaks with temperatures between ten and twenty degrees centigrade, when the refuges provide greater heat than the open ground. A total of seven checks were conducted between April and June 2019.

Limitations

A number of mats and one tin were disturbed or removed over the survey period on Oak Tree Farm and Warren Farm due to farm works, grazing cattle and land management. It is not anticipated that this has affected the overall trend of reptile hotspots and species using the site that is shown in the results.

4.0 RESULTS

4.1 Desk study

Statutory and non-statutory sites

Table 7 below lists statutorily designated sites for nature conservation located within five kilometres of the site, and non-statutory sites within two kilometres.

Table 7: Statutory and non-statutory designated sites

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
Dorset Heathlands	SPA[3]	0.2km west	8184.96	Qualifies for breeding Dartford warbler (*Sylvia undata*), nightjar (*Caprimulgus europaeus*), and woodlark (*Lullula arborea*), and overwintering hen harrier (*Circus cyaneus*) and merlin (*Falcocolumbarius*).
	Ramsar[4]	0.2km west	6730.15	The heathland contains numerous examples of dry heath, wet heath and acid valley mire, these sites include a large assemblage of nationally rare and scarce species, especially invertebrates, reptiles and birds. Other habitats on these sites include woodland, grassland, pools, salt marshes and reed swamp
Dorset Heaths	SAC[5]	0.2km west	5719.54	Designated for: Annex I habitats – purple moor-grass (*Molinia caerulea*) meadows on calcareous, peaty or clayey-silt-laden soils, calcareous fens with great fen-sedge (*Cladium mariscus*) and species of the *Caricion davallianae*, as well as alkaline fens and old acidophilous oak woods with pedunculate oak (*Quercus robur*)

[3] SPA: Special Protection Areas
[4] Ramsar: Designated as an internationally important wetland
[5] SAC: Special Areas of Conservation

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
				on sandy plains, and Annex II species: the southern damselfly (*Coenagrion mercuriale*).
Avon Valley	SPA	1.7km east	1385.1	SPA designated for wintering population of Bewick's swan (*Cygnus columbianus*) and gadwall (*Anas strepera*).
	Ramsar	1.7km east	1385.1	The valley has a greater range of habitats and a more diverse flora and fauna than any other chalk river in Britain. The valley includes one of the largest expanses of unimproved floodplain grassland in Britain.
	SSSI[6] (Bickton to Christchurch)	1.7km east	1385.1	One of the finest chalk rivers in Britain. The combinations of grassland, streams, small woods, scrub and willow carr create a varied landscape. These habitats support nationally and internationally important assemblages of breeding and wintering birds, an outstanding flora and many notable dragonflies, grasshoppers and snails.
River Avon	SAC	1.7km east	467	The Avon is rich and diverse supporting over 180 species of aquatic plant, fish varieties and aquatic invertebrates are wide ranging here. The SAC is designated for the Annex I habitat "Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation" as well as Annex 2 Desmoulin`s whorl snail *(Vertigo moulinsiana),* Sea lamprey *(Petromyzon marinus),* brook lamprey *(Lampetra planeri),* Atlantic salmon (*Salmo salar*) and bullhead (*Cottus gobio*).

[6] SSSI: Site of Special Scientific Interest

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
River Avon System	SSSI	1.7 km east	507.79	The SSSI is also notified for its significant populations of the nationally rare southern damselfly, and qualifying species white-clawed crayfish (*Austropotamobius pallipes*), Schedule 1 birds, kingfisher (*Alcedo atthis*) and Cetti's warbler (*Cettia cettia*), as well as water vole (*Arvicola amphibius*), and otter (*Lutra lutra*).
New Forest	SPA	3.1km east	28002.81	Designated for breeding nightjar, woodlark, honey buzzard (*Pernis apivorus*) and Dartford warbler as well as overwintering hen harrier.
	Ramsar	3.1km east	28002.81	Ramsar citation features include valley mires and wet heaths, rare wet plants and 65 British Red Data Book species of invertebrate. Breeding Dartford warbler, and great crested newt (*Triturus cristatus*), overwintering hen harrier as well as fish species.
The New Forest	SAC	3.1km east	29262.36	SAC primary habitats for selection are pools, wet and dry heaths, Molina meadows, beech (*Fagus sylvatica*) forest and wet woodland. SAC citation species include southern damselfly, stag beetle (*Lucanus cervus*) and great crested newt.
	SSSI	3.1km east	28947.37	New Forest supports lowland heath, valley and seepage step mire, or fen, and ancient pasture woodland, including riparian and bog woodland. The woodland supports stag beetle and lichen (*Parmelia minarum*) as well as roosting for Bechstein's bat (*Myotis bechsteini*). Grassland supports small fleabane (*Pulicaria vulgaris*) and pennyroyal (*Mentha pulegium*). Within the mires and pools is

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
				slender cottongrass (*Eriophorum gracile*), and great crested newt and the rare southern damselfly. There are otters on the streams. The heathland supports sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*).
Cranborne Common	SSSI	0.2km west	134.7	A complex of heathland and acidic grassland supports sand lizard and smooth snake, breeding Dartford warbler, heath grasshopper (*Chorthippus vagans*) and large marsh grasshopper (*Stethophyma grossum*), as well as bog bush-cricket (*Metrioptera brachyptera)*, small red damselfly (*Ceriagrion tenellum*) and the silver-studded blue (*Plebejus argus*).
Verwood Heaths	SSSI	2.9km south-west	26.4	Three pieces of heathland in the vicinity of Verwood including dry, humid and wet heathland types. The site supports sand lizard and smooth snake and heath grasshopper.
Bugden's Copse and Meadows	SSSI	3.3km south-west	7.61	The site has several adjoining meadows which lie close to Verwood. There is a high diversity of herbs on site including abundant devil's-bit Scabious (*Succisa pratensis*), heath spotted-orchid (*Dactylorhiza maculata*) and sneezewort (*Achillea ptarmica*). Betony (*Stachys officinalis*), pepper-saxifrage (*Silaum silaus*) and dyer's greenweed (*Genista tinctoria*) also occur and there is an unusual abundance of meadow thistle (*Cirsium dissectum*).
Moors River System	SSSI	3.5km west	296.6	The Moors River is a small lowland river which supports an exceptional diversity of aquatic

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
				and wetland plants. The river supports a species rich assemblage of aquatic invertebrates and an outstanding dragonfly fauna. Fish recorded include bullhead, eel (*Anguilla anguilla*) and brook lamprey, breeding Schedule 1 birds including kingfisher, also supports otter and water vole.
Ebblake Bog	SSSI	3.8km south	12.9	A rare acid mire, Ebblake Bog supports a large population of the bog bush-cricket and appears to be rich in dragonflies (*Odonata* sp.).
Boulsbury Wood	SSSI	4.2km north-west	119.76	A large varied wood with ten different identifiable stand-types including oak (*Quercus* sp.) standards with hazel (*Corylus avellana*) coppice. Several sections are ancient woodland. A small area of species-rich chalk grassland is included within the site boundary. The invertebrate fauna is extremely rich.
Holt and West Moors Heaths	SSSI	4.3km south-west	767.21	A heathland SSSI. Breeding birds recorded on site include hobby (*Falco subbuteo*), nightjar (*Caprimulgus caprimulgus*) and stonechat (*Saxicola torquata*) and there are important populations of Dartford warbler (*Sylvia undata*) and woodlark (*Lullula arborea*). The site supports sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*), strong populations of the rare heath grasshopper (*Chorthippus vagans*) and large marsh grasshopper (*Stethophyma grossum*). The site also contains Holt Forest, an area of former wood pasture, dominated by pedunculate oak (*Quercus robur*) which supports purple hairstreak

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
				(*Quercusia quercus*), white admiral (*Ladoga populi*) and purple emperor (*Apatura iris*).
Stephen's Castle	LNR[7]	2.9km south-west	18.88	Old workings with regenerating heath, scrub and grassland. Ponds on the heath also support several species of Dragonfly and Damselfly. It also contains round and oblong leaved sundew, (*Drosera rotundifolia*) and (*Drosera intermedia*).
Budgens Copse	LNR	3.6km south-west	6	Ancient woodland with wood anemone (*Anemone nemorosa*), English bluebell (*Hyacinthoides non-scripta*), yellow pimpernel (*Lysimachia nemorum*) and common cow-wheat (*Melampyrum pratense*) on site.
Potterne Hill	LNR	4.1km south-west	1.44	Site consists of lowland heath, small ponds support variety of freshwater invertebrates as well as smooth newt (*Lissotriton vulgaris*) and palmate newt (*Lissotriton helveticus*) and frogs. The site also supports common lizard (*Zootoca vivipara*) and adders (*Vipera berus*).
Dewlands Common	LNR	4.4km south-west	12	Habitat consists of lowland heath with sandy areas. All six British reptile species occur on site including the nationally rare sand lizard and smooth snake. Birds include nightjar and Dartford warblers and bog bush crickets.
Ringwood Forest & Home Wood	SINC[8]	Directly adjacent to the site at the south-eastern most corner	898.99	Ancient semi-natural woodland, which also contains and is contiguous to heathland habitat. This site supports European nightjar, smooth snake and UK BAP species annual knawel (*Scleranthus annuus*).
Sleepbrook	SNCI[9]	0.2km west	5.01	Unimproved marshy grassland

[7] LNR: Local Nature Reserve
[8] SINC: Site of Interest for Nature Conservation

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
Farm				with a small area of carr woodland.
Daggons Road Station	SNCI	0.4km north	3.16	Damp mixed woodland on acid soil, wet heath and surrounding scrub
Alderholt Heath	SNCI	0.4km north west	8.18	Wet heath with a pond containing pillwort (*Pilularia globulifera*).
Hamer Copse	SINC	0.5km south	10.79	Ancient semi-natural woodland
Lomer Copse	SINC	0.5km south-east	1.95	Ancient semi-natural woodland.
Strouds Firs Meadows	SNCI	0.6km north	1.38	Semi-improved neutral grassland
Lomer Meadow	SINC	0.6km south-east	1.90	Semi-improved inundated grassland with element of unimproved grassland
Bonfire Hill	SNCI	0.7km north	3.95	Dry heath being invaded by pines
Midgham Wood	SINC	0.8km north-west	14.35	Woodland retaining some characteristics of ancient semi-natural woodland.
Midgham Long Copse	SINC	0.9km east	18.29	Woodland retaining some characteristics of ancient semi-natural woodland
Highwood	SNCI	0.9km north-west	12.91	Deciduous woodland with grassland/scrub under pylons
Bullhill Lane	SNCI	1.3km north-west	1.52	A wooded lane with good flora
Cobley Copse (Cobley Wood)	SINC	1.3km south-east	2.24	Ancient semi-natural woodland
Boveridge Heath	SNCI	1.4km south-west	12.47	Two pieces of remnant heath under pylon wires bordered by conifers
Little and Crendle Commons	SNCI	1.5km north-west	7.8	Relict grassland and woodland along roadsides and bridleways
Sedgemoor	SINC	1.6km north-east	2.93	Ancient semi-natural woodland which also supports some wet element
Perry Copse/Ashford Water Meadows	SNCI	1.7km north-east	6.07	Woodland and grassland plus hedgerows with copse bindweed

[9] SNCI: Site of Nature Conservation Interest

Site name	Conservation status	Distance and direction from site	Size (Ha)	Habitat description
Hawkmill Lane	SNCI	1.8km north	0.59	Relict woodland and grassland along a gravel track
Reeve's Copse	SINC	1.9km north	3.49	Ancient semi-natural woodland

Dorset Heathlands SPA and Ramsar, Dorset Heath SAC and Cranborne Common SSSI are located 0.2 kilometres west of the site. Avon Valley SPA and Ramsar alongside River Avon SAC and SSSI lie 1.7 kilometres to the east of the site. New Forest Ramsar, SAC and SPA lie 3.1 kilometres to the east of the site.

Ringwood Forest and Home Wood SINC is directly adjacent to the site at the south eastern most corner, and Sleepbrook Farm SNCI is 0.2 kilometres west. Daggons Road Station and Alderholt Heath SNCIs are located 0.4 kilometres to the north of the site. Further recommendations have been made in section 5.1 to protect designated sites.

Protected species records

Records of protected species within a two-kilometre radius of the site were provided by DERC and HBIC and are presented in table 8 below.

Table 8: Protected and notable species within a two-kilometre radius of Land at Alderholt

Common Name	Scientific name	Status	Dates
Amphibians and reptiles			
Slow worm	*Anguis fragilis*	Schedule 5 WCA[10], UKBAP [11]	65 records between 2004 and 2015
Smooth snake	*Coronella austriaca*	Schedule 5 WCA, Schedule 2 Habs Regs[12],UKBAP	48 records between 2004 and 2017
Sand lizard	*Lacerta agilis*	Schedule 5 WCA, Schedule 2 Habs Regs, UKBAP	9 records between 2011 and 2017
Grass snake	*Natrix helvetica*	Schedule 5 WCA	25 records dated between 2004 and 2015
Adder	*Vipera berus*	Schedule 5 WCA, UKBAP	42 records between 2004 and 2011
Common lizard	*Zootoca vivipara*	Schedule 5 WCA, UKBAP	85 records in 2004 and 2015

[10] WCA: The Wildlife and Countryside Act 1981 (as amended)
[11] UKBAP: UK Biodiversity Action Plan
[12] Habs Regs: The Conservation of Habitats and Species Regulations 2010

Common Name	Scientific name	Status	Dates
Birds			
Lesser redpoll	*Acanthis cabaret*	Red List BoCC[13]	10 records between 2003 and 2017
Goshawk	*Accipiter gentilis*	Schedule 1 WCA,	6 records in 2016 and 2017
Marsh warbler	*Acrocephalus palustris*	Red List BoCC, UK BAP, Schedule 1 WCA	9 records in 2012
Reed warbler	*Acrocephalus scirpaceus*	UK BAP	15 records between 2002 and 2015
Skylark	*Alauda arvensis*	Red List BoCC, UK BAP	2 records in 2009 and 2010
Kingfisher	*Alcedo atthis*	Schedule 1 WCA	38 records between 2004 and 2016
Garganey	*Anas querguedula*	Schedule 1 WCA	2 records in 2001 and 2007
Gadwall	*Anas strepera*	UK BAP	128 records between 2008 and 2016
White-fronted goose	*Anser albifrons*	UK BAP, Red List BoCC	30 records between 2009 and 2017
Tree pipit	*Anthus trivialis*	Red List BoCC	17 records between 2017 and 2017
Swift	*Apus apus*	Amber List BoCC	1 record in 2006
Pochard	*Aythya ferina*	Red List BoCC	20 records between 2008 and 2017
Bittern	*Botaurus stellaris*	Schedule 1, Annex 1, Amber List BoCC, UK BAP	2 records dated 2013 and 2017
Barnacle goose	*Branta leucopsis*	Annex 1, Amber List BoCC	9 records dated 2007 to 2015
Dunlin	*Calidris alpina*	UK BAP, Amber List BoCC (Schinzii is Annex 1)	5 records between 2010 and 2015
Knot	*Calidris canutus*	UK BAP, Amber List BoCC	4 records in 2013
Ruff	*Calidris pugnax*	Schedule 1, Annex 1, Red List BoCC	8 records dated 2007 to 2015
Nightjar	*Caprimulgus europaeus*	Annex 1, Amber List BoCC, UK BAP	6 records dated 2007 to 2016
Cetti's warbler	*Cettia cetti*	Schedule 1	22 records dated 2006 to 2017
Little ringed plover	*Charadrius dubius*	Schedule 1	24 records dated 2008 to 2017
Ringed plover	*Charadrius hiaticula*	Red List BoCC	4 records in 2013

[13] BoCC: Birds of Conservation Concern

Common Name	Scientific name	Status	Dates
Black tern	*Chlidonias niger*	Schedule 1, Annex 1	1 record in 2013
White stork	*Ciconia*	Annex 1	1 record dated 2008
Marsh harrier	*Circus aeruginosus*	Schedule 1, Annex 1, Amber List BoCC	5 records dated 2008 to 2013
Hen harrier	*Circus cyaneus*	Schedule 1, Annex 1, Red List BoCC	15 records dated 2005 to 2014
Long-tailed duck	*Clangula hyemalis*	Schedule 1, Red list BoCC	1 record dated 2015
Hawfinch	*Coccothraustes*	Red List BoCC, UK BAP	2 records dated 2015
Cuckoo	*Cuculus canorus*	Red List BoCC, UK BAP	10 records dated 2007 to 2015
Bewick's swan	*Cygnus columbianus*	Schedule 1, Annex 1, Amber List BoCC, UK BAP	250 records dated 1993 to 2012
Whooper swan	*Cygnus*	Schedule 1, Annex 1, Amber List BoCC	59 records dated 2012
House Martin	*Delichon urbicum*	Amber List BoCC	21records from between 2006 and 2014
Lesser spotted woodpecker	*Dendrocopos minor*	Red List BoCC, UK BAP	2 records from 2005 and 2010
Little egret	*Egretta garzetta*	Annex 1	27 records between 2007 and 2017
Corn bunting	*Emberiza calandra*	Red List BoCC, UK BAP	1 record in 2006
Yellowhammer	*Emberiza citrinella*	Red List BoCC, UK BAP	14 records dated between 2006 and 2017
Reed bunting	*Emberiza schoeniclus*	Amber List BoCC, UK BAP	28 records between 2007 and 2017
Merlin	*Falco columbarius*	Schedule 1, Annex 1, Red List BoCC	7 records between 2006 and 2013
Peregrine	*Falco peregrinus*	Schedule 1, Annex 1	21 records between 2008 and 2017
Hobby	*Falco subbuteo*	Schedule 1	13 records between 2008 and 2016
Kestrel	*Falco tinnunculus*	Amber List BoCC	3 records between 2006 and 2007
Brambling	*Fringilla montifringilla*	Schedule 1	5 records between 2005 and 2016
Snipe	*Gallinago*	Amber List BoCC	36 records between 2009 and 2017
Oystercatcher	*Haematopus ostralegus*	Amber List BoCC	22 records between 2008 and 2017
Little gull	*Hydrocoloeus minutus*	Schedule 1, Annex 1, Amber List BoCC	3 records between 2010 and 2013
Little bittern	*Ixobrychus minutus*	Schedule 1, Annex 1	1 record in 2008

Common Name	Scientific name	Status	Dates
Herring gull	*Larus argentatus*	Red List BoCC, UK BAP	10 records between 2010 and 2015
Lesser black-backed gull	*Larus fuscus*	Red List BoCC, UK BAP	35 records between 2008 and 2017
Mediterranean gull	*Larus melanocephalus*	Schedule 1, Annex 1, Amber List BoCC	7 record between 2012 and 2017
Black-tailed godwit	*Limosa limosa*	Schedule 1, Red List BoCC, UK BAP	66 records between 2007 and 2016
Linnet	*Linaria cannabina*	Red List BoCC, UK BAP	3 records between 2009 and 2012
Grasshopper warbler	*Locustella naevia*	Red List BoCC, UK BAP	1 record in 2008
Common crossbill	*Loxia curvirostra*	Schedule 1	6 records between 2006 and 2017
Woodlark	*Lullula arborea*	Schedule 1, Annex 1, UK BAP	7 records between 2006 and 2017
Smew	*Mergellus albellus*	Annex 1	3 records dated 2010
Black kite	*Milvus migrans*	Annex 1	1 record in 2012
Red kite	*Milvus milvus*	Schedule 1, Annex 1, Amber List BoCC	14 records between 2008 and 2017
Grey wagtail	*Motacilla cinerea*	Red List BoCC	12 records between 2007 and 2017
Yellow wagtail	*Motacilla flava*	Red List BoCC	6 records between 2006 and 2013
Spotted flycatcher	*Muscicapa striata*	Red List BoCC, UK BAP	4 record between 2006 and 2017
Curlew	*Numenius arquata*	Red List BoCC, UK BAP	25 records between 2007 and 2017
Great bustard	*Otis tarda*	Annex 1	6 records between 2009 and 2010
Osprey	*Pandion haliaetus*	Annex 1, Schedule 1	8 records between 2007 and 2017
House sparrow	*Passer domesticus*	Red List BoCC, UK BAP	73 records between 2006 and 2017
Honey buzzard	*Pernis apivorus*	Schedule 1, Annex 1, Amber List BoCC	1 record in 2017
Redstart	*Phoenicurus*	Amber List BoCC	3 records between 2011 and 2017
Willow Warbler	*Phylloscopus trochilus*	Amber List BoCC	1 record in 2005
Spoonbill	*Platalea leucorodia*	Schedule 1, Annex 1, Amber List BoCC	4 records between 2008 and 2012
Golden plover	*Pluvialis apricaria*	Annex 1, Amber List BoCC	9 records between 2009 and 2016
Slavonian grebe	*Podiceps auritus*	Schedule 1, Annex 1, Red List BoCC	1 record in 2016

Common Name	Scientific name	Status	Dates
Black-necked grebe	*Podiceps nigricollis*	Schedule 1	11 records between 2007 and 2016
Marsh tit	*Poecile palustris*	Red List BoCC, UK BAP	1 record in 2011
Dunnock	*Prunella modularis*	UK BAP, Amber List BoCC	62 records between 2005 and 2008
Bullfinch	*Pyrrhula*	Amber List BoCC, UK BAP	15 records between 2006 and 2016
Firecrest	*Regulus ignicapilla*	Schedule 1, Amber List BoCC	6 records between 2008 and 2017
Kittiwake	*Rissa tridactyla*	Red List BoCC	1 record in 2009
Whinchat	*Saxicola rubetra*	Red List BoCC	1 record in 2015
Woodcock	*Scolopax rusticola*	Red List BoCC	1 record in 2016
Common tern	*Sterna hirundo*	Annex 1, Amber List BoCC	2 records in 2013 and 2017
Arctic tern	*Sterna paradisaea*	Annex 1, Amber List BoCC	1 record in 2013
Turtle dove	*Streptopelia turtur*	UK BAP, Red List BoCC	3 records from between 2006 and 2008
Tawny owl	*Strix aluco*	Amber List BoCC	4 records between 2005 and 2008
Starling	*Sturnus vulgaris*	Red List BoCC, UK BAP	267 records between 2005 and 2017
Dartford warbler	*Sylvia undata*	Schedule 1 WCA, Amber List BoCC	14 records in between 2007 and 2017
Wood sandpiper	*Tringa glareola*	Schedule 1, Annex 1, Amber List BoCC	2 records in 2015 and 2017
Greenshank	*Tringa nebularia*	Schedule 1, Amber List BoCC	2 records in 2016 and 2010
Green sandpiper	*Tringa ochropus*	Schedule 1, Amber List BoCC	25 records between 2008 and 2017
Redshank	*Tringa totanus*	Amber List BoCC	11 records between 2007 and 2017
Redwing	*Turdus iliacus*	Schedule 1, Red List BoCC	13 records between 2007 and 2017
Song thrush	*Turdus philomelos*	UK BAP, Red List BoCC	13 records between 2006 and 2013
Fieldfare	*Turdus pilaris*	Schedule 1, Red List BoCC	21 records between 2008 and 2017
Mistle thrush	*Turdus viscivorus*	Red list BoCC	10 records between 2009 and 2015
Barn owl	*Tyto alba*	Schedule 1	7 records between 2009 and 2016
Lapwing	*Vanellus vanellus*	Red List BoCC, UK BAP	104 records between 2007 and 2017

Common Name	Scientific name	Status	Dates
Mammals – bats			
Whiskered bat	*Myotis mystacinus*	Schedule 2 Habs Regs, Schedule 5 WCA	2 records between 2008 and 2015
Natterer's bat	*Myotis nattereri*	Schedule 2 Habs Regs, Schedule 5 WCA	1 record in 2011
Pipistrelle species	*Pipistrellus* sp.	Schedule 2 Habs Regs, Schedule 5 WCA	5 records between 2009 and 2015
Common pipistrelle	*Pipistrellus*	Schedule 2 Habs Regs, Schedule 5 WCA	2 records in 2011 and 2015
Soprano pipistrelle	*Pipistrellus pygmaeus*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	1 record in 2015
Brown long-eared bat	*Plecotus auritus*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	2 records in 2009 and 2012.
Long-eared bat species	*Plecotus* sp.	Schedule 2 Habs Regs, Schedule 5 WCA	4 records between 2009 and 2015.
Mammals – Terrestrial (non-bats)			
European otter	*Lutra lutra*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	1 record in 2013
Eurasian badger	*Meles meles*	PBA[14]	7 records between 2006 and 2009
Harvest mouse	*Micromys minutus*	UK BAP	1 record in 2010
Hazel dormouse	*Muscardinus avellanarius*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	4 records between 2010 and 2015
Polecat	*Mustela putorius*	Schedule 2 Habs Regs, Schedule 5 WCA	1 record in 2009
Plants			
Marsh clubmoss	*Lycopodiella inundata*	UK BAP	34 records in 2007
Yellow century	*Cicendia filiformis*	UK BAP	1000 records in 2008
Bluebell	*Hyacinthoides non-scripta*	Schedule 8 WCA	7 records between 2005 and 2016
Coral-necklace	*Illecebrum verticillatum*	Nationally rare, UK BAP	1 record on 2006
Nail Fungus	*Poronia punctata*	UK BAP	2 records in 2011

[14] PBA: Protection of Badgers Act

Common Name	Scientific name	Status	Dates
Invertebrates			
Silver-studded blue	*Plebejus argus*	Schedule 5 WCA and UK BAP	75 records between 2009 and 2014

These records of protected, notable and invasive species in the vicinity of the site increase the likelihood of them being present where suitable habitat is identified in the field survey.

4.2 Field survey

4.2.1 Vegetation

The accompanying phase 1 habitat maps provided as appendices II to V depict the habitats encountered and highlight areas of interest with target notes. The site mainly comprises agricultural fields, which are separated by a minor B-road. The site is located on seasonally wet soils and which encompasses waterbodies and ditches. The eastern part of the site is composed of agricultural buildings, fields supporting semi-improved grassland and associated hedgerows. The western part of the site is mainly composed of improved grassland, with some arable, rush pasture, broad-leaved and mixed woodlands, waterbodies and associated ditches, bordered by hedgerows and scattered trees. Descriptions of habitats encountered during the survey are provided below:

Improved grassland (target note 1)

Improved grassland fields were recorded in abundance on the western part of the site, and these comprised a short sward height of ten centimetres or less. These fields are species-poor, and grass dominated, and were being intensively grazed by cattle and horses, or grown for sileage, at the time of the survey. These comprise dominant perennial rye-grass (*Lolium perenne*), abundant meadow foxtail (*Alopecurus pratensis*) and annual meadow-grass (*Poa annua*), occasional herbaceous species were recorded such as daisy (*Bellis perennis*) and common mouse-ear (*Cerastium fontanum*). A list of species encountered during the survey is presented in table 9 below.

Table 9: Species present in the improved grassland

Common name	*Latin name*	Abundance	Status
Grasses, ferns and mosses			
Creeping bent	*Agrostis stolonifera*	LO	Common in grasslands of all kinds except on most acidic soils
Meadow foxtail	*Alopecurus pratensis*	A	Common in meadows on neutral to alkaline soils
Cock' foot	*Dactylis glomerata*	LO	Common & widespread
Red fescue	*Festuca rubra*	F	Common & widespread

Common name	***Latin name***	**Abundance**	**Status**
Yorkshire fog	*Holcus lanatus*	F	Common & widespread
Hard rush	*Juncus inflexus*	LO	Common in damp grasslands, mostly on heavy clay soils
Perennial ryegrass	*Lolium perenne*	D	Common & widespread
Annual meadow-grass	*Poa annua*	F	Abundant in grasslands, cultivated ground & wasteground
Rough meadow-grass	*Poa trivialis*	LF	Abundant in meadows, woods, marshes & wasteground
Herbaceous plants			
Daisy	*Bellis perennis*	O	Common & widespread
Shepherd's-purse	*Capsella bursa-pastoris*	LO	Common on wasteland, roadsides & arable land
Wavy bittercress	*Cardamine flexuosa*	O	Common in damp habitats, streamsides, wasteland & gardens
Cuckooflower	*Cardamine pratensis*	LO	Common in damp habitats, streamsides, wasteland & gardens
Common mouse-ear	*Cerastium fontanum*	O	Common & widespread
Sticky mouse-ear	*Cerastium glomerata*	O	Common in disturbed areas
Creeping thistle	*Cirsium arvense*	LO	Common & widespread
Cut-leaved crane's-bill	*Geranium dissectum*	O	Common & widespread
Dove's-foot crane's-bill	*Geranium molle*	R	Common & widespread
Hogweed	*Heracleum sphondylium*	R	Common & widespread
Red dead-nettle	*Lamium pupureum*	LO	Common on arable, wasteland & hedgebanks
Greater plantain	*Plantago major*	LO	Common & widespread
Meadow buttercup	*Ranunculus acris*	O	Common & widespread
Creeping buttercup	*Ranunculus repens*	LF	Common & widespread
Broad-leaved dock	*Rumex obtusifolius*	O	Common & widespread
Dandelion	*Taraxacum* agg.	LO	Common & widespread
Common field speedwell	*Veronica persica*	LO	Common on arable & wasteland
Thyme-leaved speedwell	*Veronica serpyllifolia*	LR	Common & widespread

Species present are common and widespread. However, the improved grassland does provide some, albeit limited, potential habitat for reptiles and great crested newts. Further recommendations have been made in section 5.

Species poor semi-improved grassland (target note 2)

The field located in the east of the site is composed of species-poor semi-improved grassland. These fields are grass dominated, and are grown for sileage, with a sward height of up to twenty centimetres at the time of the survey. The field margins of the improved grassland located in the west of the site are also composed of species-poor semi-improved grassland. These are dominated by grass species such as abundant perennial rye-grass and meadow foxtail and locally abundant cock's-foot (*Dactylis glomerata*). Herbaceous species were also recorded including locally abundant cleavers (*Galium aparine*), occasional common sorrel (*Rumex acetosa*) and locally occasional lesser celandine (*Ranunculus ficaria*). A list of species encountered during the survey is presented in table 10 below.

Table 10: Species present in the species-poor semi-improved grassland

Common name	*Latin name*	Abundance	Status
Grasses, ferns and mosses			
Creeping bent	*Agrostis stolonifera*	LF	Common in grasslands of all kinds except on most acidic soils
Meadow foxtail	*Alopecurus pratensis*	A	Common in meadows on neutral to alkaline soils
Cock' foot	*Dactilys glomerata*	LA	Common & widespread
Red fescue	*Festuca rubra*	F	Common & widespread
Yorkshire fog	*Holcus lanatus*	F	Common & widespread
Perennial rye-grass	*Lolium perenne*	A	Common & widespread
Rough meadow-grass	*Poa trivialis*	O	Abundant in meadows, woods, marshes & wasteground
Herbaceous plants			
Three-cornered leek	*Alium triquetrum*	LF	Non-native, invasive, on Schedule 9 of WCA
Wavy bittercress	*Cardamine flexuosa*	LO	Common in damp habitats, streamsides, wasteland & gardens
Common mouse-ear	*Cerastium fontanum*	O	Common & widespread
Creeping thistle	*Cirsium arvense*	LO	Common & widespread
Spear thistle	*Cirsium vulgare*	LO	Common & widespread
Common fumitory	*Fumaria officinalis*	LO	Common on arable, especially chalk & sand
Cleavers	*Galium aparine*	LF	Common & widespread
Cut-leaved crane's-bill	*Geranium dissectum*	O	Common & widespread
Dove's-foot crane's-bill	*Geranium molle*	R	Common & widespread
Herb-Robert	*Geranium robertianum*	LF	Common & widespread
Spanish bluebell	*Hyacinthoides hispanica*	LO	Garden escape

Common name	***Latin name***	**Abundance**	**Status**
White dead-nettle	*Lamium album*	LO	Common & widespread
Red dead-nettle	*Lamium pupureum*	LO	Common on arable, wasteland & hedgebanks
Daffodils	*Narcissus* sp.	LO	Introduced species
Lesser celandine	*Ranunculus ficaria*	LO	Common on damp, loamy or clay soils
Creeping buttercup	*Ranunculus repens*	LF	Common & widespread
Common sorrel	*Rumex acetosa*	O	Common in grasslands & open woodlands
Broad-leaved dock	*Rumex obtusifolius*	LF	Common & widespread
Ragwort	*Senecio jacobaea*	R	Common & widespread
Groundsel	*Senecio vulgaris*	LO	Common & widespread
Smooth sow-thistle	*Sonchus oleraceus*	LO	Common & widespread
Greater stitchwort	*Stellaria holostea*	LO	Common in hedgebanks & woodland, except on very acid soils
Common comfrey	*Symphytum officinale*	R	Common by riversides, marshes, ditches & damp roadsides
Dandelion	*Taraxacum* agg.	O	Common & widespread
Wood sage	*Teucrium scorodonia*	LO	Common in dry woodlands, grasslands & heathlands, not on very calcareous soils
Wheat sp.	*Trictium* sp.	LO	Cultivar
Common nettle	*Urtica dioica*	LF	Common & widespread
Common field speedwell	*Veronica persica*	LO	Common on arable & wasteland
Germander speedwell	*Veronica chamaedry*	LF	Common in woodlands, hedgebanks & grassland
Vetch sp.	*Vicia* sp.	LF	Common & widespread

Species present are common and widespread. However, the improved grassland does provide some, albeit limited, potential habitat for reptiles and great crested newts. Furthermore, the presence of WCA schedule 9 species (three-cornered leek) is discussed further in section 5.3.1.

Arable (target note 3)

One field located adjacent west to the Ringwood Road, is cultivated as a wheat monoculture crop. The crop had been harvested last autumn and the ground at the time of the survey was being ploughed in preparation for sowing a spring crop. A few ephemeral species had colonised the bare ground of the arable field. Species present included occasional groundsel (*Senecio vulgaris*), red dead-nettle (*Lamium pupureum*), common mouse-ear, common fumitory (*Fumaria officinalis*), common chickweed (*Stellaria media*), annual meadow-grass (*Poa annua*), cow parsley (*Anthriscus sylvestris.)* and spear thistle (*Cirsium vulgare*).

Species present are common and widespread. The arable is considered to be of negligible ecological value. No further recommendations have been made.

Rush pasture (target note 4)

Some of the wetter areas of the site support a rush pasture community. An area of rush-pasture is located in the north of the site. It is grazed by horses and had a sward height ranging from 2 to 15 centimetres in height at the time of the survey. Another area of rush-pasture is located in the east of the site, surrounding a wet woodland and a ditch. Both of these areas are dominated by rush species with abundant moss species. Species recorded included locally abundant hard rush (*Juncus inflexus*) and frequent soft rush (*Juncus effusus*), locally abundant Yorkshire-fog (*Holcus lanatus*), locally frequent creeping buttercup (*Ranunculus repens*), common mouse-ear, selfheal (*Prunella vulgaris*), white clover (*Trifolium repens*) and cat's-ear (*Hypochaeris radicata*), locally occasional broad-leaved dock *(Rumex obtusifolius*), common nettle (*Urtica dioica*), common sorrel, spear thistle, great willowherb (*Epilobium hirsutum*) and wild angelica (*Angelica sylvestris*).

Species present are common and widespread and the habitat does not support the species necessary to qualify as a UK BAP habitat. The rush pasture provides some potential habitat for reptiles and great crested newts. Further recommendations have been made in section 5.2.

Semi-improved grassland (target note 5)

A small area of semi-improved grassland is located in the northern part of the site. The area is located next to unoccupied farm buildings. The grassland is not subject to regular management, which has allowed grasses to form tussocks of up to 60 centimetres in height. Species recorded include locally abundant cock's-foot (*Dactilys glomerata)*, frequent false oat-grass (*Arrhenatherum elatius),* locally frequent broad-leaved dock and occasional hogweed (*Heracleum sphondylium*). A full species list is presented in table 11 below:

Table 11: Species recorded in the species-rich semi-improved grassland

Common name	***Latin name***	**Abundance**	**Status**
Grasses, ferns and mosses			
Creeping bent	*Agrostis stolonifera*	O	Common in grasslands of all kinds except on most acidic soils
False oat-grass	*Arrhenatherum elatius*	F	Common in meadows & on road verges
Soft brome	*Bromus hordeaceus*	O	Common on moist, dry grassland & wasteland
Sterile brome	*Bromus sterilis*	LO	Common on dry hedgebanks, waste ground & roadsides
Cock' foot	*Dactilys glomerata*	LA	Common & widespread

Common name	***Latin name***	**Abundance**	**Status**
Red fescue	*Festuca rubra*	O	Common & widespread
Yorkshire-fog	*Holcus lanatus*	A	Common & widespread
Perennial rye-grass	*Lolium perenne*	LO	Common & widespread
Rough meadow-grass	*Poa trivialis*	O	Abundant in meadows, woods, marshes & wasteground
Herbaceous plants			
Mugwort	*Artemisa vulgaris*	R	Common & widespread
Common mouse-ear	*Cerastium fontanum*	O	Common & widespread
Creeping thistle	*Cirsium arvense*	LO	Common & widespread
Spear thistle	*Cirsium vulgare*	LO	Common & widespread
Common fumitory	*Fumaria officinalis*	LO	Common on arable, especially chalk & sand
Cut-leaved crane's-bill	*Geranium dissectum*	O	Common & widespread
Dove's-foot crane's-bill	*Geranium molle*	R	Common & widespread
Herb-Robert	*Geranium robertianum*	O	Common & widespread
Hogweed	*Heracleum sphondylium*	O	Common & widespread
Perforated St John's wort	*Hypericum perforatum*	O	Common & widespread, especially on chalk & sand
White dead-nettle	*Lamium album*	LO	Common & widespread
Red dead-nettle	*Lamium pupureum*	LO	Common on arable, wasteland & hedgebanks
Meadow buttercup	*Ranunculus acris*	O	Common & widespread
Lesser celandine	*Ranunculus ficaria*	LO	Common on damp, loamy or clay soils
Creeping buttercup	*Ranunculus repens*	LF	Common & widespread
Common sorrel	*Rumex acetosa*	O	Common in grasslands & open woodlands
Broad-leaved dock	*Rumex obtusifolius*	LF	Common & widespread
Ragwort	*Senecio jacobaea*	R	Common & widespread
Red campion	*Silene dioica*	O	Common in hedgebanks, woodlands & on rich base soils
Smooth sow-thistle	*Sonchus oleraceus*	LO	Common & widespread
Greater stitchwort	*Stellaria holostea*	LO	Common in hedgebanks & woodland, except on very acid soils
Common chickweed	*Stellaria media*	O	Common & widespread
Common comfrey	*Symphytum officinale*	R	Common by riversides, marshes, ditches & damp roadsides
Dandelion	*Taraxacum agg.*	O	Common & widespread
Common nettle	*Urtica dioica*	LF	Common & widespread

Common name	*Latin name*	Abundance	Status
Common field speedwell	*Veronica persica*	LO	Common on arable & wasteland
Germander speedwell	*Veronica chamaedrys*	LF	Common in woodlands, hedgebanks & grassland
Vetch sp.	*Vicia sp.*	LF	Common & widespread

Species present are common and widespread. However, the semi-improved grassland does provide some, potential habitat for birds, reptiles and great crested newts. Further recommendations have been made in section 5.

Amenity grassland / parkland (target note 6)

An area of amenity grassland is located in the east of the site by the caravan park. The grass is regularly mown to approximately 4 centimetres in height. Mature scattered oaks (*Quercus robur*) up to ten metres in height were present in this area. Bracket fungi and moss species were associated with these mature trees. The presence of scattered mature oak trees throughout the amenity grassland makes this area characteristic of parkland. Species included within the parkland include locally dominant moss sp., abundant perennial rye-grass, frequent mature oak, rare field wood-rush (*Luzula campestris*). A full species list is presented below in table 12.

Table 12: Species recorded in the amenity grassland/parkland habitat

Common name	*Latin name*	Abundance	Status
Grasses, ferns and mosses			
Cock' foot	*Dactylis glomerata*	O	Common & widespread
Red fescue	*Festuca rubra*	O	Common & widespread
Yorkshire fog	*Holcus lanatus*	O	Common & widespread
Perennial rye-grass	*Lolium perenne*	A	Common & widespread
Field woodrush	*Luzula campestris*	R	Common & widespread
Annual meadow-grass	*Poa annua*	O	Abundant in grasslands, cultivated ground & wasteground
Moss sp.		LD	
Herbaceous plants			
Lesser burdock	*Arctium minus*	R	Common & widespread
Daisy	*Bellis perennis*	F	Common & widespread
Sticky mouse-ear	*Cerastium glomerata*	O	Common in disturbed areas
Spear thistle	*Cirsium vulgare*	LO	Common & widespread
Foxglove	*Digitalis pupurea*	LO	Common on acid soils
Ground ivy	*Glechoma hederacea*	LO	Common & widespread except on the poorest soils
Common cat's-ear	*Hypochaeris radicata*	O	Common in meadows, grasslands, not usually on very calcareous soils
Ribwort plantain	*Plantago lanceolata*	O	Common & widespread

Common name	*Latin name*	Abundance	Status
Lesser celandine	*Ranunculus ficaria*	LF	Common on damp, loamy or clay soils
Creeping buttercup	*Ranunculus repens*	O	Common & widespread
Common sorrel	*Rumex acetosa*	F	Common in grasslands & open woodlands
Broad-leaved dock	*Rumex obtusifolius*	O	Common & widespread
Common chickweed	*Stellaria media*	O	Common & widespread
Dandelion	*Taraxacum agg.*	O	Common & widespread
White clover	*Trifolium repens*	LF	Common & widespread
Common field speedwell	*Veronica persica*	O	Common on arable & wasteland
Germander speedwell	*Veronica chamaedrys*	O	Common in woodlands, hedgebanks & grassland
Common dog-violet	*Viola riviniana*	LO	Common & widespread
Trees and shrubs			
Pedunculate oak	*Quercus robur*	F	Common & widespread, except on very poor soils

Species present are common and widespread. The parkland habitat qualifies as a UK BAP habitat and is valuable to a wide range of species including fungi, lichens, invertebrates, birds and mammals. Decaying wood on the trees provides habitat for a range of saproxylic invertebrates and hole-nesting and insectivorous birds. Further recommendations have been made in section 5.2.3.

Tall ruderal (target note 7)

Tall ruderal habitat is present by most of the farm buildings present on site and also surrounding one of the waterbodies, W21, located in the south-west of the site. Species present include locally dominant common nettle, occasional cock's-foot, creeping thistle (*Cirsium arvense*), soft rush and locally abundant hemlock water-dropwort (*Oenanthe crocata*) adjacent to waterbody, W21. A full species list is detailed in table 13 below.

Table 13: Species recorded in the tall ruderal habitat

Common name	*Latin name*	Abundance	Status
Grasses, ferns and mosses			
False oat-grass	*Arrhenatherum elatius*	LF	Common in meadows & on road verges
Sterile brome	*Anisantha sterilis*	LO	Common on dry hedgebanks, waste ground & roadsides
False wood-brome	*Brachypodium sylvaticum*	LO	Common in open woods & scrub on rich base soils
Cock's-foot	*Dactylis glomerata*	O	Common & widespread

Common name	***Latin name***	**Abundance**	**Status**
Tufted hair-grass	*Deschampsia cespitosa*	LO	Common & widespread
Yorkshire-fog	*Holcus lanatus*	O	Common & widespread
Soft rush	*Juncus effusus*	O	Common in damp habitats on both rich and poor soils
Perennial rye-grass	*Lolium perenne*	LO	Common & widespread
Rough meadow-grass	*Poa trivialis*	LF	Common & widespread
Bracken	*Pteridium aquilinum*	LF	Common & widespread
Herbaceous plants			
White bryony	*Bryonia dioica*	LA	Common on hedgebanks, scrub & woodland edge, especially on calcareous soils
Creeping thistle	*Cirsium arvense*	LF	Common & widespread
Spear thistle	*Cirsium vulgare*	LR	Common & widespread
Foxglove	*Digitalis purpurea*	R	Common on acid soils
Wild teasel	*Dipsacus fullonum*	R	Common & widespread, especially of clay soils
Broad-leaved willowherb	*Epilobium montanum*	LF	Common in woodlands, hedgebanks, walls & rocks
Ash saplings	*Fraxinus excelsior*	LO	Common on moister, base-rich soils
Cleavers	*Galium aparine*	LA	Common & widespread
Cut-leaved crane's-bill	*Geranium dissectum*	R	Common & widespread
Herb-Robert	*Geranium robertianum*	LR	Common & widespread
Wood avens	*Geum urbanum*	LR	Common on less acid soils
Hogweed	*Heracleum sphondylium*	LO	Common & widespread
Honeysuckle	*Lonicera periclymenum*	LO	Common & widespread, mostly on acid soils
Hemlock water-dropwort	*Oenanthe crocata*	LA	Common in marches, wet woodlands & ditches
Blackthorn saplings	*Prunus spinosa*	LR	Common & widespread
Pedunculate oak saplings	*Quercus robur*	LR	Common & widespread, except on very poor soils
Common sorrel	*Rumex acetosa*	O	Common in grasslands & open woodlands
Creeping buttercup	*Ranunculus repens*	LO	Common & widespread
Bramble	*Rubus fructicosus agg.*	O	Common & widespread
Broad-leaved dock	*Rumex obtusifolius*	LF	Common & widespread
Common ragwort	*Senecio jacobea*	LR	Common & widespread
Red campion	*Silene dioica*	LR	Common in hedgebanks, woodlands & on rich base soils

Common name	*Latin name*	Abundance	Status
Hedge mustard	*Sisymbrium officinale*	LO	Common on neutral to base-rich soil
Prickly sow-thistle	*Sonchus asper*	LR	Common & widespread
Hedge woundwort	*Stachys sylvatica*	LR	Common in woodlands & hedgebanks
Wood sage	*Teucrium scorodonia*	LF	Common in dry woodlands, grasslands & heathlands, not on very calcareous soils
Upright hedge-parsley	*Torilis japonica*	LR	Common on roadsides, hedgebanks & woodland borders
Common nettle	*Urtica dioica*	LD	Common & widespread

Species present are common and widespread. However, the tall ruderal provides some, potential habitat for foraging bats and badgers, reptiles and great crested newts. Further recommendations have been made in section 5.7.

Scrub (target note 8)

Areas of scrub habitat have been recorded in small patches throughout the site, notably by tall ruderal habitat, close to farm buildings but also around the waterbody located in the south-west of the site, rush pasture habitat and some hedgerows that are managed irregularly. Species recorded include locally dominant bramble (*Rubus fructicosus*), occasional gorse (*Ulex europeaus*), young oak, willow sp. (*Salix sp*.), wild cherry (*Prunus avium*), rose sp. (*Rosa* sp.), and hawthorn (*Crateagus monogyna*).

Species present are common and widespread. However, the scrub provides some potential habitat for foraging bats and badgers, nesting birds, reptiles and great crested newts. Further recommendations have been made in section 5.

Broad-leaved woodland (target note 9)

Three areas of broad-leaved woodland are located on site: W1, W2 and W3. W1 and W2 are partly landscaped, located on wet ground and support some species favouring wet conditions. W1 is located in the south-east of the site and also supports ephemeral and permanent ponds. It is adjacent to a large area of broad-leaved and mixed woodland, located to the south of the site. W2 is located in the south-western part of the site and is adjacent to a wet ditch and a large fishing lake. In both woodlands, a mature canopy is present and this is dominated by willow species such as goat willow (*Salix caprea*) and pedunculate oak, with a sparse understorey comprising holly (*Ilex aquifolium*) and spindle (*Euonymus europaeus*). The ground flora is also limited with few ancient woodland indicators which were recorded in drier areas, such as locally abundant English bluebells (*Hyacinthoides non-scripta*) and occasional greater stitchwort (*Stellaria holostea*). A wet ditch runs through the centre of W3, and this is approximately 20 metres wide and 270 metres long. This woodland is not managed and has a thick understorey with limited ground flora. The species recorded in the canopy and understorey layer are

similar to W1 and W2, being dominated by ivy (*Hedera helix*), common nettle and broad-leaved dock. A full species list is presented in table 14 below.

Table 14: Species recorded in the broad-leaved woodland habitat

Common name	*Latin name*	Abundance	Status
Grasses, ferns and mosses			
Moss sp.		LD	
Soft brome	*Bromus hordeaceus*	LO	Common on moist, dry grassland & wasteland
Scaly male-fern	*Dryopteris affinis*	O	Common in woodland, usually on acid soils
Yorkshire-fog	*Holcus lanatus*	F	Common & widespread
Soft rush	*Juncus effusus*	R	Common in damp habitats on both rich and poor soils
Perennial rye-grass	*Lolium perenne*	A	Common & widespread
Rough meadow-grass	*Poa trivialis*	O	Abundant in meadows, woods, marshes & wasteground
Herbaceous plants			
Garlic mustard	*Allaria petiolata*	O	Common on hegdebanks, open woodlands, especially chalk
Cow parsley	*Anthriscus sylvestris*	LF	Common on roadsides, hedgebanks & woodland borders
Lords and ladies	*Arum maculatum*	LF	Common, mostly on calcareous or richer soils
Herb-Robert	*Geranium robertianum*	LO	Common & widespread
Ground ivy	*Glechoma hederacea*	LO	Common & widespread except on the poorest soils
Ivy	*Hedera helix*	LA	Common & widespread
Red dead-nettle	*Lamium purpureum*	O	Common on arable, wasteland & hedgebanks
Honeysuckle	*Lonicera periclymenum*	LO	Common & widespread, mostly on acid soils
Green alkanet	*Pentaglottis sempervirens*	LF	Common in hegdebanks & wasteland
Bramble	*Rubus fructicosus*	LF	Common & widespread
Lesser celandine	*Ranunculus ficaria*	LF	Common on damp, loamy or clay soils
Creeping buttercup	*Ranunculus repens*	O	Common & widespread
Wood dock	*Rumex sanguineus*	LF	Common & widespread
Red campion	*Silene dioica*	LF	Common in hedgebanks, woodlands & on rich base soils
Hedge woundwort	*Stachys sylvatica*	LF	Common in woodlands & hedgebanks

Common name	*Latin name*	Abundance	Status
Greater stitchwort	*Stellaria holostea*	O	Common in hedgebanks & woodland, exept on very acid soils
Dandelion	*Taraxacum agg.*	R	Common & widespread
Common nettle	*Urtica dioica*	LO	Common & widespread
Common dog-violet	*Viola riviniana*	LO	Common & widespread
Trees and shrubs			
Silver birch	*Betula pendula*	LF	Common & widespread in dry woodlands, downs & heaths
Hazel	*Corylus avellana*		Common & widespread, on less acid soils
Hawthorn	*Crateagus monogyna*	LO	Common & widespread
Ash	*Fraxinus excelsior*	LO	Common on moister, base-rich soils
Holly	*Ilex aquifolium*	LO	Common on drier soils
Scot's pine	*Pinus sylvestris*	R	Common and widespread
Blackthorn	*Prunus spinosa*	LO	Common & widespread
Pedunculate oak	*Quercus robur*	D	Common & widespread, except on very poor soils
Eared willow	*Salix aurita*	LF	Frequent on heathland, moors, damps woodlands, especially on acid soils
Goat willow	*Salix caprea*	LF	Common in woodlands, hedgerows, scrub & wasteland
Willow sp.	*Salix sp.*	LF	Common on wet soils
Elder	*Sambucucus nigra*	LO	Common on nutrient-enriched soils
Gorse	*Ulex europaeus*	LO	Common on rough grassland, heathland, mostly on acid soils

The stands of native broad-leaved woodland are considered to be a habitat of ecological value and they would likely qualify as the UKBAP Priority habitat 'Wet Woodland' or 'Mixed Lowland Deciduous Woodland', The habitat could potentially support badgers, nesting birds, foraging/commuting/roosting bats, dormice, great crested newt, and reptiles, these species are discussed further in section 4.2.2.

Mixed woodland (target note 10)

An area of mixed woodland is located by a wet ditch and rush pasture in the west of the site. The habitat comprises a mature canopy which is dominated by Scot's pine (*Pinus sylvestris*) and grey willow (*Salix cinerea*), with a sparse understorey comprising holly. The ground flora is not typical of wet woodland apart from the presence of rush sp. (*Juncus* sp.). The woodland is used for cover for game rearing, and feeders were encountered during the survey. A full species list is detailed below in table 15.

Table 15: Species recorded in the mixed woodland

Common name	*Latin name*	Abundance	Status
Grasses, ferns and mosses			
Moss sp.		LD	
Yorkshire-fog	*Holcus lanatus*	D	Common & widespread
Soft rush	*Juncus effusus*	O	Common in damp habitats on both rich and poor soils
Rough meadow-grass	*Poa trivialis*	O	Abundant in meadows, woods, marshes & wasteground
Herbaceous plants			
Cleavers	*Galium aparine*	LO	Common & widespread
Ivy	*Hedera helix*	LA	Common & widespread
Creeping buttercup	*Ranunculus repens*	O	Common & widespread
Red currant	*Ribes sanguineum*	O	Introduced
Bramble	*Rubus fructicosus*	LF	Common & widespread
Broad-leaved dock	*Rumex obtusifolius*	LF	Common & widespread
Greater stitchwort	*Stellaria holostea*	O	Common in hedgebanks & woodland, except on very acid soils
Common nettle	*Urtica dioica*	LF	Common & widespread
Trees and shrubs			
Silver birch	*Betula pendula*	O	Common & widespread in dry woodlands, downs & heaths
Hawthorn	*Crateagus monogyna*	O	Common & widespread
Holly	*Ilex aquifolium*	O	Common on drier soils
Scots pine	*Pinus sylvestris*	D	Common and widespread
Grey willow	*Salix cinerea*	LA	Common in wet woodlands, fens, fen carr & by fresh water

The stand of mixed woodland is considered to be a habitat of ecological value and may qualify as the UKBAP Priority habitat 'Lowland Mixed Deciduous Woodland', The habitat could potentially support badgers, nesting birds, foraging/commuting/roosting bats, dormice, great crested newt, and reptiles, these species are discussed further in section 4.2.2.

Tree line (target note 11, 12 and 13)

There are four tree lines present on site, and these mark some field boundaries which are located on banks and often by a ditch. The trees forming the lines are mature, sometimes veteran, some of which are partially decaying presenting tear-outs and missing limbs. Most of the trees are mature pedunculate oak (*Quercus robur*) (target note 11) with the exception of a tree line located in the north of the site by a wet ditch, which is composed of willow species (*Willow sp*.) (target note 12) and a tree line composed of mature beech (*Fagus sylvatica*), located in the centre of the site (target note 13) . Shrubs are present by

these mature trees in a small number of areas. Scrub species include hawthorn (*Crateagus mongyna*), elder (*Sambucus nigra*) and gorse (*Ulex europeaus*), whilst the ground flora includes broad-leaved dock, foxglove (*Digitalis purpurea*), wood sage (*Teucrium scorodonia*), cleavers and common nettle.

The habitat could potentially support badgers, nesting birds, foraging / commuting / roosting bats, dormice, great crested newt, and reptiles, these species are discussed further in section 4.2.2.

Scattered trees (target note 14)

Scattered trees are present to the west of the B-road. These are mostly mature and veteran pedunculate oak trees, some of which are partially decaying presenting tear-outs and missing limbs. Scot's pine (*Pinus sylvestris*) is also present but only as a rare occurrence.

The habitat could potentially support badgers, nesting birds, foraging / commuting / roosting bats, dormice, great crested newt, and reptiles, these species are discussed further in section 4.2.2.

Ponds (target note 15)

Six ponds were recorded on site, some of which hold water permanently and some temporarily. P1 (or W21 as numbered in the great crested newt result section in table 25), which is located in the west of the site, was of an ellipse shape measured approximately 70 by 25 metres at its widest point. It is deep in most places, with vegetated gently sloping banks, with locally abundant bulrush (*Typha latifolia*) and hemlock water-dropwort. No additional macrophytes were recorded although abundant scrub in form of saplings was recorded by the pond.

P2 (or W32 in table 25) was recorded in the south of the site, and was a trial pit recently dug measuring three metres by two metres and approximately 0.5 metres deep. It had a gravel substrate and some algal growth was identified on the surface with some annual meadow grass sparsely recorded on the banks.

P3 (or W26 in table 25) was recorded north of the woodland in the east of the site. The pond measured approximately 30 by 8 metres and was surrounded by scrub and mature trees. It had steeply sloping banks without any obvious vegetation. Floating sweet-grass (*Glyceria fluitans*) was present in the aquatic zone. The pond is heavily shaded and covered with leaf litter.

P4 (or W27 in table 25) was recorded within a wet woodland, 90 metres to the south-east of P3. P4 is a depression which holds water temporarily, which at the time of the survey measured 5 by 7 metres. No vegetation was recorded, although leaf litter was abundant here.

P5 (W28 in table 25) is located 90 metres to the south of P3 and 25 metres to the west of P4. P5 is a landscaped pond with the parkland, measuring 10 by 7 metres in size, which has gently sloping sides. Species recorded included locally abundant bulrush, locally frequent yellow iris (*Iris pseudacorus*), occasional pendulous sedge (*Carex pendula*), goat willow (*Salix caprea*) and soft rush, scaly male fern (*Dryopteris affinis*), bramble and locally abundant bamboo (*Bambusoideae sp*) on the top of the bank.

P6 is a large flooded depression within the wet woodland, with willow growing in its basin. It measured approximately 40 by 30 metres with shallow slopes. No additional vegetation was present apart from the willow trees, which created heavy shading.

The ponds may qualify as a UKBAP Priority Habitat, 'ponds', which is part of the broad habitat type 'open standing water'. In order to qualify the are required to support WCA schedule 5 or 8 species. Recommendations have therefore been made in section 5.1. They may also support great crested newts, reptiles, foraging bats as well as providing a source of drinking water for birds and mammals. This is discussed further in section 4.2.2.

Ditches (target note 16 & 17)

A total of 19 ditches, which are seasonally wet, were recorded on site. At the time of the survey, nine wet ditches (target note 16) were recorded in the western part of the site, whilst ten dry ditches (target note 17) were recorded throughout the site.

The ditches are approximately 0.5 metres in depth and 0.75 metres in width, and they are vegetated with the adjoining field layer vegetation. Most of these ditches were either dry or held a very limited amount of water at the time of the walkover survey. It is considered that these ditches are likely to hold water for only short periods during periods of wet weather before rapidly drying out again. This was confirmed in the 2017 and 2019 surveys, as in April 2019 ditches were recorded as being wet, however, the July 2017 survey identified most of the ditches surveyed being dry, with grassland present within the ditches.

D2, which is located in the north-west of the site supported additional vegetation to the grassland community within the majority of the ditches on the site. Species recorded include greater willowherb (*Epilobium hirsutum*), and rush species (*Juncus sp*.). D3 supported hemlock water-dropwort, great willowherb, wild angelica (*Angelica sylvestris*) and rush species. D9 supported abundant fool's watercress (*Apium nodiflorum*), floating sweet-grass and rare giant fescue (*Festuca gigantea*).

The wet ditches on site are considered to be of moderate ecological value as they provide an ecological resource and a source of drinking water for a range of fauna, including invertebrates, amphibians, birds and mammals. Further recommendations are provided in section 5.1. The wet ditches on site could potentially support great crested newt, and reptiles, these species are discussed further in section 4.2.2.

Native hedgerows (target note 18)

Twenty hedgerows are located on site. All the hedgerows, except one, are native and therefore qualify as UK BAP hedgerows. Most hedgerows comprise a good variety of woody species and a moderately diverse field layer. The hedgerows range from approximately 1 to 4 metres in height and appear to be managed on a regular basis via flailing. Some include mature standard pedunculate oak trees including some veteran specimens, some of which are partially decaying, and are located on earth banks and alongside drainage ditches. The hedgerows on site are summarised in table 16 below.

Table 16: Plant species recorded within the hedgerows

Key (see Phase 1 map)	Woody species	Ground flora	UK BAP? (80% native species)	General description
H1	Silver birch (*Betula pendula*) Spindle (*Euonymus europeaus*) Holly (*Ilex aquifolium*) Pedunculate oak (*Quercus robur*) Rose sp. (*Rosa* sp.) Grey willow (*Salix cinerea*) Elder (*Sambucus nigra*)	False oat-grass (*Arrhenatherum elatius*) Foxglove (*Digitalis purpurea*) Common male fern (*Dryopteris filix-mas*) Greater willowherb (*Epilobium hirsutum*) Cleavers (*Galium aparine*) Wood avens (*Geum urbanum*) Ivy (*Hedera helix*) Soft rush (*Juncus effusus*) Rush sp. (*Juncus sp*.) Honeysuckle (*Lonicera periclymenum*) Bramble (*Rubus fructicosus*)	Yes	Intact, mature species-rich hedgerow, measuring approximately 1 to 2 metres in height and 2 metres in width. A wet ditch is associated with the hedgerow
H2	Hawthorn (*Crateagus monogyna*) Spindle Holly Blackthorn (*Prunus spinosa)* Pedunculate oak Rose sp.	False oat-grass Cleavers Yorkshire-fog (*Holcus lanatus*) Bramble Wood dock (*Rumex sanguinea*) Wood sage (*Teucrium scorodonia*)	Yes	Intact mature hedgerow. Measuring approximately 3 metres in height, with oak standard measuring 8 metres in height.
H3	Hawthorn Spindle Holly Blackthorn Pedunculate oak Rose sp. Elder Grey willow	False oat-grass Cleavers Ivy Yorkshire-fog Bramble Wood dock Wood sage	Yes	Intact mature hedgerow. Measuring approximately 3 metres in height, with oak standard measuring 8 metres in height, on a bank with associated dry ditch. Gaps are present in places but not exceeding 10% of its length

Key (see Phase 1 map)	Woody species	Ground flora	UK BAP? (80% native species)	General description
H4	Hawthorn Blackthorn Holly Rose sp. Grey willow	Wood false brome (*Brachypodium sylvaticum*) Cleavers Ivy Yorkshire-fog Rough meadow-grass (*Poa trivialis*) Bracken (*Pteridium aquilinium*) Bramble Common nettle (*Urtica dioica*)	Yes	Intact mature species-rich, measuring approximately 2.5 metres in height and 1.5 in width, dry ditch associated
H5	Silver birch Hawthorn Spindle Holly Pedunculate oak Wild cherry (*Prunus avium*) Elder	False oat-grass Cleavers Bramble Honeysuckle	Yes	Intact mature species-rich, measuring approximately 3 metres in height and 2 in width, with oak standards measuring approximately 8 metres in height dry ditch associated
H6	Hawthorn Spindle Pedunculate oak Rose species Grey willow Elder	Cow parsley (*Anthriscus sylvestris*) False oat grass Common male fern Cleavers Wood avens Hogweed (*Heracleum sphondylium*) Honeysuckle Bramble Common nettle	Yes	Intact mature species-rich hedgerow, approximately 2 metres high, and 1.5-metre-wide, wet ditch associated, by a track
H7	Hawthorn Holly Pedunculate oak Blackthorn	Ivy Cleavers Yorkshire fog Bramble	Yes	Intact mature species-rich hedgerow measuring approximately 2.5 metres in height and 1.5 metres in width, on a bank with numerous

Key (see Phase 1 map)	Woody species	Ground flora	UK BAP? (80% native species)	General description
	Grey willow Elder	Wood sage Honeysuckle Common nettle		oak standards, including some veteran trees,
H8	Silver birch Hawthorn Spindle Holly Pedunculate oak Rosa sp. Grey willow Willow sp.	Tufted hair-grass (*Deschampsia cespitosa*) Wood avens Yorkshire-fog Bluebell (*Hyacinthoides non-scripta*) Honeysuckle Rough meadow-grass Bramble Broad-leaved dock Wood sage Common nettle	Yes	Intact species-rich hedgerow measuring 3.5 metres in height and 2 metres width with associated wet ditch and bank with mature oak, silver birch and willow sp. standard trees, some trees limbs have been cut recently.
H9	Hawthorn Rose sp. Elder Pedunculate oak Gorse (*Ulex europeaus*)	Bramble Ivy Broad-leaved dock Hard rush (*Juncus inflexus*) Nettle	Yes	Intact species-rich hedgerow measuring 2 metres in height and 1.5 metres width with associated wet ditch
H10	Hawthorn Holly Cherry laurel (*Prunus laurocerasus*) Blackthorn Rose sp. Elder	Three-cornered leek (*Allium triquetrum*) Cock's-foot (*Dactilys glomerata*) Herb-Robert (*Geranium robertianum*) Cleavers Bramble Red dead-nettle (*Lamium pupureum*) Honeysuckle Hogweed Ivy Common nettle	Yes	Species rich hedgerow planted in double row measuring 2 metres in height and 2 metres in width

Key (see Phase 1 map)	Woody species	Ground flora	UK BAP? (80% native species)	General description
H11	Hawthorn Spindle Blackthorn Oak Gorse	Lords and ladies (*Arum maculatum*) Cleavers Herb Robert Ground ivy (*Glechoma hederacea*) Ivy Honeysuckle Greater stitchwort (*Stellaria holostea*) Upright hedge parsley (*Torilis japonica*) Bramble Wood sage Common nettle	Yes	Mature species rich hedgerow measuring 2 metres high and 1.5 metres in width, with occasional gaps. Mature oak planted as standards measuring 6 to 8 metres in height, some are veterans.
H12	Hazel Hawthorn Oak Gorse	Bracken Bramble Honeysuckle	Yes	Unmanaged native species-poor hedgerow with standard oaks, measuring up to 3 metres in height and 2 metres wide. Standard oak measuring up to 8 metres high.
H13	Hawthorn Holly Blackthorn	Bramble Cleavers Nettle	Yes	Native species-poor hedgerow, with gaps and abundant bramble measuring approximately 1.5-metre-high and 1 metre wide
H14	Hawthorn, Blackthorn, Oak, Eared willow, Elder Rose sp.	Cleavers Bl dock Bracken Bramble	Yes	Intact mature species-rich hedgerow measuring 2 metres in height and 1.5 metres in width
H15	Beech (*Fagus sylvatica*) Leylandii (*Cypressus x leylandii*) Silver birch	Bramble Montbretia (*Crocosmia x crocosmiiflora*) Variegated periwinkle (*Vinca sp.)*	No	Ornamental hedgerow mix of non-native and native species, delimiting adjacent property. Up to

Key (see Phase 1 map)	Woody species	Ground flora	UK BAP? (80% native species)	General description
	Butterfly bush (*Buddleja davidii*) Bamboo (*Bambusoideae*)	Honeysuckle		3 metres high and 2 metres wide, not maintained regularly, schedule 9 species Montbretia present
H16	Hazel Hawthorn Spindle Ash Blackthorn Oak Eared willow Elder Rose	False oat-grass Cleavers Cocks foot Ivy Red dead nettle Common nettle	Yes	Intact species-rich long-established hedgerow, measuring managed 2 metres in height and 1.5 metres width on a bank with associated dry ditch, the mature oaks and ash have been pollarded to 0.5 metres.
H17	Hawthorn Spindle Ash Blackthorn Oak Rose sp. Elder	Garlic mustard (*Alliaria petiolata*) Lords and ladies Foxglove (*Digitalis pupurea*) Common furmitory (*Fumaria officinalis*) Cleavers Herb Robert Ground ivy Bluebell White dead nettle Lesser celandine (*Ranunuculus ficaria*) Bramble Common nettle	Yes	Intact species-rich hedgerow, measuring managed to approximately 2 metres in height and 1.5 metres width on a bank with associated dry ditch
H18	Hazel Hawthorn Elder Spindle Ash	Bramble Cocks foot Cleavers Ivy Hogweed	Yes	Intact species-rich hedgerow, with standards measuring managed to approximately to 1.5 metres high, dry ditch east. The standard trees, oak, ash, cherry bird and holly are

Key (see Phase 1 map)	Woody species	Ground flora	UK BAP? (80% native species)	General description
	Holly Bird cherry Blackthorn Pedunculate oak Lilac (*Syringa vulgaris*) Gorse	Daffodils (*Narcissus sp*.) Greater stitchwort Common nettle		measuring up to 6 metres high
H19	Hornbeam Hawthorn Blackthorn Gorse Rose sp. Elder	Cleavers Ivy Bramble Bracken Common nettle	Yes	Intact, long-established species-poor hedgerow, measuring approximately 1 metre high maintained, located on a bank by a dry ditch.
H20	Hazel Hawthorn Blackthorn Oak Rose sp. Elder Gorse	Cleavers Ivy Hogweed Bluebell Upright hedge parsley Bracken Bramble Nettle	Yes	Intact, long-established species-rich hedgerow, with one standard oak, measuring approximately 1.5 metres high maintained, located on a bank.

Mitigation will be required where any of the hedgerows that qualify as UK BAP habitat are to be removed. The habitat provides potential habitat for badgers, bats, birds dormice, great crested newts and reptiles. Further recommendations have been made in sections 4.2.2 and section 5.2.

Hardstanding (Target note 19)

An unvegetated bitumen track used as an access to a farm and caravan park is located within the east of the site. No vegetation was recorded within this habitat.

Ephemeral/short perennial (Target note 20)

Farm tracks are located throughout the site and allow access between the farm buildings and fields. These were composed of bare ground and were sparsely vegetated by ephemeral vegetation. Species present include frequent annual meadow-grass and greater plantain (*Plantago major*). A full species list is presented in table 17.

Table 17: Species recorded within the ephemeral vegetation

Common name	Latin name	Abundance	Status
Grasses, ferns and mosses			
Creeping bent	*Agrostis stolonifera*	F	Common in grasslands of all kinds except on most acidic soils
Soft brome	*Bromus hordeaceus*	LO	Common on moist, dry grassland & wasteland
Tufted hair-grass	*Deschampsia cespitosa*	LO	Common & widespread
Annual meadow-grass	*Poa annua*	F	Abundant in grasslands, cultivated ground & wasteground
Herbaceous plants			
Common mouse-ear	*Cerastium fontanum*	O	Common & widespread
Fat-hen	*Chenopodium album*	LO	Common in arable & wasteland habitats
Common fumitory	*Fumaria officinalis*	R	Common on arable, especially chalk & sand
Cut-leaved crane's-bill	*Geranium dissectum*	R	Common & widespread
Trailing St John's-wort	*Hypericum humifusum*	R	Common on open well drained soils
Greater plantain	*Plantago major*	F	Common & widespread
Groundsel	*Senecio vulgaris*	LO	Common in disturbed places
Common chickweed	*Stellaria media*	LD	Common & widespread
White clover	*Trifolium repens*	O	Common & widespread

Species present are common and widespread. However, the ephemeral vegetation does provide potential basking habitat for reptiles. Further recommendations have been made in section 5.7.

4.2.2 Protected species assessment

Badgers

A thorough search of the site recorded one disused badger sett with two entrance holes within the survey area. No active setts were recorded on site. A main sett had previously been recorded as active in 2018. This sett is located on the site boundary to the north of the poultry barn on Oak Tree Farm (grid reference: SU 12706 11863). The survey in April 2019 assessed the sett as being disused. A camera trap was installed for eight nights between 15th and 23rd May 2019 to document any activity in or around the hole. No evidence of badgers was captured on the camera.

Two fresh latrines were identified at the base of a hedgerow on Warren Park Farm in the western area of the site (grid ref: SU 11743 11524). There were mammal paths associated with the latrines running to the north and west along the hedgerow suggesting that badgers are foraging and commuting across this part of the site.

Badgers are highly mobile and may have several setts which are in use at different times of year. If during construction a badger sett is discovered, works must cease until advice can be sort from a qualified ecologist.

Further recommendations have been made in section 5.2.

Bats

Descriptions of building

The buildings to be demolished for the development comprises four buildings on Sleepbrook Farm and six buildings on Oak Tree Farm. These are described in greater detail in Table 18 below.

A map of the buildings has been provided in appendix VI.

Table 18: Building descriptions

Building reference	External description	Internal description
Sleepbrook Farm		
Building 1	• Building 1 comprises a large barn constructed from various materials: • The northern elevation is constructed of wooden and metal sheets. • The eastern elevation is constructed of breezeblock and corrugated asbestos. • The southern elevation is constructed of breezeblock and brick. • The western elevation is constructed of breezeblock, brick, corrugated asbestos and wooden panels. • The main area of the barn has a pitched, corrugated asbestos roof which is in reasonable condition. • The southern area of the barn has a mono-pitched, corrugated asbestos roof that adjoins the main barn roof. This is in reasonable condition. • Asbestos guttering is present on the south elevation. • Dense ivy covers the west elevation.	• The barn is open to the corrugated asbestos roof and therefore has no separate internal void. • The east, south and west elevations are open. • A large metal frame is present. • Ivy on the west elevation contained a sparrow nest at the time of the survey. • The building is used regularly for farm vehicle parking and general farm storage
Building 2	• Building 2 comprises a single storey farm building of concrete construction. • The pitched roof is constructed from corrugated asbestos sheets.	• The building is open to the corrugated asbestos roof and therefore has no separate internal void. • The building is open all elevations due to open windows and doors and as a result the internal of the building was

Building reference	External description	Internal description
	• Iron window frames are present. • Asbestos guttering is present on the north and south elevations. • Dense ivy covers the eastern and south-eastern elevations.	very light and a breeze was felt. • At the time of survey and active bird nest was present on a perch within the building. Evidence of four other inactive nests was found, including a swallow nest.
Building 3	• Building 3 comprises a single storey farm building of concrete construction. • The pitched roof comprises corrugated asbestos and plastic sheets, with asbestos at the ridge. • The building is open on all elevations. • Asbestos guttering is present.	• The building is open to the corrugated asbestos roof and therefore has no separate internal void. • A timber frame is present inside the building. • The building is open on all elevations due to the open windows and doorframe. • The internal of the building was very light due to the corrugated plastic tiles. • At the time of the survey an active bird nest was present in the south of the building.
Building 4	• Building 4 comprises a single storey farm building of concrete construction. • The pitched roof comprises corrugated asbestos and plastic sheets, with asbestos at the ridge. • The building is open on all elevations. • Asbestos guttering is present.	• The building is open to the corrugated asbestos roof and therefore has no separate internal void. • A timber frame is present inside the building. • The building is open on all elevations due to the open windows and doorframe. • The internal of the building was very light due to the corrugated plastic tiles.
Oak Tree Farm		
Building 1 – poultry building	• Building 1 comprises a very large farm building of	• Internal access could not be gained; therefore, a full

Building reference	External description	Internal description
	breezeblock and corrugated asbestos construction. • The pitched roof is constructed from corrugated metal and corrugated plastic. • Several large vents are present across the ridge of the roof. • A wooden door is present on the eastern elevation. • A lean-to is present on the southern elevation of the building, constructed from breezeblock and asbestos sheets. The pitched roof of the lean-to is constructed from corrugated metal. • A dilapidated wooden shed, with pitched corrugated metal roof, is attached to the southern elevation of the lean-to. • Dense ivy is present on the southern elevation. At the time of the survey a pigeon nest was present within the ivy.	survey of the internal aspect was not possible.
Building 2	• Building 2 comprises a single storey farm building of breezeblock construction. • The hipped roof is constructed from clay tiles, which are in a generally good condition with some slipped tiles present. • Asbestos guttering is present. • Two wooden doors and two metal framed windows are present on the northern elevation. • Two boarded up windows are present on the eastern	• Internal access could not be gained due to the absence of a loft hatch; therefore, a full survey of the internal aspect was not possible. • The internal of the building was generally in a dilapidated state.

Building reference	External description	Internal description
	elevation. • Wooden fascia is present.	
Building 3	• Building 3 comprises a single storey building of concrete construction. • The pitched roof is constructed from corrugated asbestos. • Asbestos guttering is present. • The southern elevation is densely covered by both ivy and bramble.	• The building is open to the asbestos roof and therefore has no separate internal void. • A wooden frame is present. • The building is open on the north elevation through an open door and is therefore very light and breezy inside.
Building 4	• Building 4 comprises a small barn of breezeblock construction. • The pitched roof is constructed from corrugated asbestos. • A mature root system is present throughout the roof. • The building is open on the southern elevation and is therefore very exposed to the elements. • Elder and bramble from a dense cover on the south-eastern elevation.	• The building is open to the asbestos roof and therefore has no separate internal void. • A wood frame is present. • At the time of the survey a sparrow nest was present in the root system, in the roof.
Building 5	• Building 5 comprises a small outhouse of breezeblock construction, attached to the west elevation of building 4. • The pitched roof is constructed from corrugated asbestos with a dense covering off moss.	• The building is open to the asbestos roof and therefore has no separate internal void. • A wooden frame is present. • The building is open on the southern elevation and is

Building reference	External description	Internal description
		therefore very light and breezy inside.
Building 6	• Building 6 comprises a single storey structure of breezeblock construction. • The pitched corrugated roof is constructed of corrugated asbestos, which is in a reasonable condition. • A large wooden door is present on the northern elevation. • Wooden fascias are in poor condition but any gaps are superficial and do not lead to crevices.	• Internal access could not be gained; therefore, a full survey of the internal aspect was not possible.

Survey results

Internal survey: evidence of bats
Despite a thorough internal survey of all of the buildings no evidence of bats was recorded.

External survey: evidence of bats
Despite a thorough external survey of all of the buildings no evidence of bats was recorded.

Potential for bats
Several and access points were available for bats within the buildings and a limited number of roosting opportunities were present in two of the buildings these are described in table 19 below.

Table 19: Potential for bats

Building reference	Potential access points for bats	Potential roosting opportunities for bats	Overall suitability
Sleepbrook Farm			
Building 1	• Open elevations on east, south and west.	• No roosting features were identified.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.
Building 2	• Open on all elevations through open windows and doors.	• Ivy covering on east and southeast elevations. Although potentially too dense to allow bats to roost.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.
Building 3	• Through open windows and door less doorways on all elevations.	• No roosting features were identified.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.
Building 4	• Through open windows and door less doorways on all elevations.	• No roosting features were identified.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.

Building reference	Potential access points for bats	Potential roosting opportunities for bats	Overall suitability
Oak Tree Farm			
Building 1	• Potential access through large vents on roof of building.	• Ivy covering on south elevation. Although potentially too dense to allow bats to roost.	Due to the limited number of access points and roosting provisions available for bats, all parts of the building have been assessed as holding **negligible** potential to support roosting bats.
Building 2	• One slipped tile.	• Under slipped tile.	Due to the single access points and lack of roosting provisions available for bats, the building has been assessed as holding **negligible** potential to support roosting bats.
Building 3	• Open north elevation.	• No roosting features were identified.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.
Building 4	• Open south elevation.	• Elder and bramble covering on southeast elevation.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.
Building 5	• Open south elevation.	• No roosting features were identified.	Due to the lack of roosting provisions available for bats, as well as the open nature of the building and the absence of an internal void, the building has been assessed as holding **negligible** potential to support roosting bats.

Building reference	Potential access points for bats	Potential roosting opportunities for bats	Overall suitability
Building 6	• No access features were identified.	• No roosting features were identified.	Due to the lack of access points and roosting provisions available for bats, the building has been assessed as holding **negligible** potential to support roosting bats.

*All buildings were concluded to hold **negligible** potential to support bats do to being unsuitable for roosting. Therefore, no further action is required.*

Foraging habitat

The site was assessed as holding moderate potential to support bats commuting and foraging on site due to the numbers of mature, well-connected hedgerows, the improved grassland fields and a woodland area located to the south of the site. The site is also located within two kilometres of eight confirmed bat roosts; species recorded roosting include pipistrelle species (*Pipistrellus* sp.), Daubenton's bat (*Myotis daubentonii*) and long-eared bat species (*Plecotus* sp.*)*.

Activity Surveys

A series of bi-monthly bat activity transect surveys were undertaken between April and September 2019 alongside use of static monitoring devices. A map showing the three transect routes is provided in appendix VII. A summary of the results is provided below in table 20 and a map showing peak activity levels is provided in appendix VIII. Detailed results are provided in appendix IX.

The most abundant species recorded during the activity surveys were common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle. Serotine (*Eptesicus serotinus*) and noctule (*Nyctalus noctula*) were recorded in moderate numbers. Low numbers of *Myotis* species, long-eared species (*Plecotus* sp.), Leisler's (*Nyctalus leisleri*), Nathusius' pipistrelle (*Pipistrellus nathusii*) and barbastelle (*Barbastella barbastellus*) were also recorded during the surveys.

Greater horseshoe (*Rhinolophus ferrumequinum*) bats were not recorded during the activity transects but were shown to be using the site from data collected by static monitoring.

Table 20: Summary of transect activity

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
Eastern Transect – Blue	16.04.19	Low	Common pipistrelle Soprano pipistrelle	Hedgerow along Ringwood Road and in the woodland area to the south west of the site.	Common pipistrelle Soprano pipistrelle Noctule
	30.04.19	High	Common pipistrelle Soprano pipistrelle	Hedgerow along Ringwood Road and in the woodland area to the south west of the site and along the hedgerow to the north east of Oak Tree Farm.	Common pipistrelle Soprano pipistrelle Noctule Myotis species Serotine
	15.05.19	Moderate	Serotine Noctule	Hedgerow along Ringwood Road and in the woodland area to the south west of the site and along the hedgerow to the north east of Oak Tree Farm.	Common pipistrelle Soprano pipistrelle Noctule Serotine
	30.05.19	Moderate	Common pipistrelle	Hedgerow along Ringwood Road and in the woodland area to the south west of the site.	Common pipistrelle Soprano pipistrelle Noctule Myotis species Serotine Long eared
	11.06.19	Moderate	Common pipistrelle	Hedgerow along Ringwood Road and in the woodland area to the south west of the site.	Common pipistrelle Soprano pipistrelle
	25.06.19	Low	Common pipistrelle Soprano pipistrelle	Low levels of activity across all areas of site.	Common pipistrelle Soprano pipistrelle

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
					Noctule Myotis species Serotine
	09.07.19	Moderate	Common pipistrelle	Hedgerow along Ringwood Road and in the woodland area to the south west of the site.	Common pipistrelle Soprano pipistrelle Noctule Serotine
	10.07.19	Moderate	Common pipistrelle	Moderate levels of activity across all areas of site.	Common pipistrelle Soprano pipistrelle Noctule
	23.07.19	Low	Common pipistrelle	Low levels of activity across all areas of site.	Common pipistrelle Soprano pipistrelle Nathusius's pipistrelle
	06.08.19	High	Common pipistrelle	High levels across all areas of site.	Common pipistrelle Soprano pipistrelle
	20.08.19	Low	Common pipistrelle	Low activity across site- most active areas were hedgerow along Ringwood Road and in the woodland area to the south west of the site.	Common pipistrelle Soprano pipistrelle Serotine
	10.09.19	High	Common pipistrelle	High activity across site- most active areas were hedgerow along the Ringwood Road and in the woodland area to the south west of the site.	Common pipistrelle Soprano pipistrelle Myotis species Serotine Barbastelle Long eared
Northern Transect – Orange	16.04.19	Low	Common pipistrelle Soprano pipistrelle	Most activity along hedgerow between stopping points C and D and the	Common pipistrelle Soprano pipistrelle

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
				south-western hedgerows between stopping points G and H.	
	30.04.19	Low	Common pipistrelle	Most activity along the hedgerow on the southern boundary of Sleepbrook Farm between stopping points B and C.	Common pipistrelle Soprano pipistrelle Noctule Serotine
	15.05.19	Low	Common pipistrelle	Activity along the hedgerows running north to south through the centre of the transect (between stopping points H and I and stopping points I and K).	Common pipistrelle Soprano pipistrelle Serotine Noctule Leisler's Long eared
	30.05.19	Low	Common pipistrelle	Most activity along hedgerow between stopping points C and B.	Common pipistrelle Soprano pipistrelle Noctule
	11.06.19	Low	Common pipistrelle	Most activity along hedgerow between stopping points H and E and small wooded area adjacent to stopping point E.	Common pipistrelle Soprano pipistrelle Nathusius' pipistrelle Noctule
	25.06.19	Moderate	Common pipistrelle Soprano pipistrelle	Activity small wooded area adjacent to stopping point E and along adjoining hedgerow to the north west of the site.	Common pipistrelle Soprano pipistrelle Noctule Myotis species
	09.07.19	Low	Common pipistrelle	Low levels of activity across all areas of site	Common pipistrelle Soprano pipistrelle Myotis species Myotis species (suspected Daubenton's)

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
					Long eared Serotine
	10.07.19	Low	Common pipistrelle	Low levels of activity across all areas of site – most bats near to the woodland area at stopping point E.	Common pipistrelle Soprano pipistrelle
	23.07.19	Low	Common pipistrelle	Low levels of activity across all areas of site	Common pipistrelle Soprano pipistrelle Noctule Long eared
	06.08.19	Moderate	Common pipistrelle	Moderate activity across the site with most activity around the woodland at E and the hedgerow between points C and D.	Common pipistrelle Soprano pipistrelle
	20.08.19	Moderate	Common pipistrelle Soprano pipistrelle	Moderate levels of activity across all areas of site	Common pipistrelle Soprano pipistrelle Noctule Myotis species (suspected Daubenton's) Serotine
	10.09.19	Moderate	Common pipistrelle	Moderate levels of activity across all areas of site	Common pipistrelle Soprano pipistrelle Serotine
Green transect -	16.04.19	Moderate	Common pipistrelle Soprano pipistrelle	Activity throughout with the majority of activity along the two hedgerows to the north of Warren Park Farm.	Common pipistrelle Soprano pipistrelle Noctule Myotis species
	30.04.19	Moderate	Common pipistrelle Soprano pipistrelle	Majority of activity recorded in the trees and pond the in the south west and in the	Common pipistrelle Soprano pipistrelle Myotis species (suspected Daubenton's)

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
				woodland area to the south between stopping points D and E.	Noctule
	15.05.19	Low	Common pipistrelle	Majority of activity recorded in the trees and pond the in the south-west and in the woodland area to the south between stopping points D and E.	Common pipistrelle Soprano pipistrelle Noctule Myotis species (suspected Daubenton's) Myotis species
	30.05.19	Moderate	Common pipistrelle Soprano pipistrelle	Majority of activity recorded in the trees and pond the in the south-west and in the woodland area to the south between stopping points D and E.	Common pipistrelle Soprano pipistrelle Noctule Myotis species (suspected Daubenton's) Serotine
	11.06.19	Moderate	Common pipistrelle	Majority of activity recorded in the trees and pond the in the south west and in the woodland area to the south between stopping points D and E and along the two hedgerows to the north of Warren Park Farm.	Common pipistrelle Soprano pipistrelle Myotis species (suspected Daubenton's)
	25.06.19	Moderate	Common pipistrelle	Majority of activity recorded in the trees and pond the in the south-west and in the woodland area to the south between stopping points D and E and along the two hedgerows to the north of Warren Park Farm.	Common pipistrelle Soprano pipistrelle Myotis species (suspected Daubenton's) Noctule

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
	09.07.19	High	Common pipistrelle Soprano pipistrelle	High levels of activity throughout the site.	Common pipistrelle Soprano pipistrelle Myotis species (suspected Daubenton's) Noctule Long eared Serotine Myotis species
	10.07.19	High	Common pipistrelle Soprano pipistrelle	High levels of activity throughout the site.	Common pipistrelle Soprano pipistrelle Noctule Long eared Serotine Myotis species
	23.07.19	Low	Common pipistrelle Soprano pipistrelle	Low levels of activity across the site.	Common pipistrelle Soprano pipistrelle Noctule Leisler's Serotine Myotis species Nathusius' pipistrelle
	06.08.19	Low	Common pipistrelle Soprano pipistrelle	Low levels of activity across the site.	Common pipistrelle Soprano pipistrelle Myotis species
	20.08.19	Low	Common pipistrelle	Low levels of activity across the site. Most activity near the pond and woodland edge between stopping points E and D.	Common pipistrelle Soprano pipistrelle Myotis species (suspected Daubenton's) Serotine
	10.09.19	High	Common pipistrelle	High levels of activity throughout the site.	Common pipistrelle Soprano pipistrelle

Transect	Date	Activity levels	Most frequent species	Peak areas	Species recorded
					Myotis species Serotine Noctule

Static monitoring

A plan showing the location of the static detectors is provided in appendix VII. The full results of the static monitoring are presented in table 19 below. A summary of the findings has been provided below:

- A total of six species of bat were recorded during the static monitoring survey including common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, serotine, *Myotis* species and greater horseshoe.

- Greater horseshoe bats were recorded on transect 1 and transect 3 with a low number of passes occurring each month (April toSeptember). A peak of 17 passes was recorded on transect 3 during July's monitoring session.

- Greater horseshoe bats were most frequently recorded on transect 1 at static 2 and static 3. These statics were placed along hedgerows and near the north of the site near an area of woodland. On transect 3, statics 8 and 9 recorded the most activity. Static 9 was located to the south western corner of the site near the Ringwood Forest edge and static 8 was located in a hedgerow to the north of Warren Park Farm. Dark corridors must be maintained in these areas to prevent disturbance to commuting and foraging areas.

- In spring, greater horseshoe bats feed over cattle-grazed pastures and in ancient semi-natural woodlands and meadows kept for hay and silage are also chosen for foraging in summer. Therefore, the management on Sleepbrook Farm and Warren Park Farm are likely to be beneficial to greater horseshoe bats due to the presence of grazing horses all year round on transect 1 and dairy farm cattle on Warren Park Farm on transect 3.

- Moderate numbers of passes of Nathusius' pipistrelles were recorded consistently over the survey period on transects 1 and 2. Peak activity was recorded on transect 1 in September and in July on transect 2.

- Serotines consistently used the site throughout the survey period with the most passes being recorded on transect 1 and 2. Peak activity was recorded on transect 1 during September.

- The majority of activity across the site was from common pipistrelle which were active across all transects with the most activity on transect 3 with peak activity in June and July. Total activity was also high on transect 1, with activity being low for this species throughout the year and having a massive peak in activity in September.

- Soprano pipistrelles were recorded across all transects throughout the survey period but were most frequently recorded on transect 3. The peak number of passes occurring in July with heightened activity also recorded in September.

- All other bats were recorded at low levels of activity throughout the site.

Table 21: Bat passes recorded during the static monitoring

Orange transect – Sleepbrook Farm - Statics 1-3

Month	*Eptesicus serotinus*	*Myotis species*	*Pipistrellus nathusii*	*Pipistrellus pipistrellus*	*Pipistrellus pygmaeus*	*Rhinolophus ferrumequinum*
Apr	39	6	120	5508	534	3
May	197	7	80	1393	435	2
Jun	37	3	145	1235	202	4
Jul	12	1	19	404	126	4
Aug	2124	19	29	2674	391	7
Sep	128	12	361	14989	654	8
Grand Total	**2537**	**48**	**754**	**26203**	**2342**	**28**

Blue transect – Oak Tree Farm Statics 4-6

Month	*Eptesicus serotinus*	*Myotis species*	*Pipistrellus nathusii*	*Pipistrellus pipistrellus*	*Pipistrellus pygmaeus*
Apr	43	141	186	1747	290
May	564	109	44	2932	399
Jun	9	111	136	3301	234
Jul	16	297	310	8318	631
Aug	4	7		242	360
Sep	4	18	9	651	438
Grand Total	**640**	**683**	**685**	**17191**	**2352**

Green transect (southern) – Warren Park Farm -Statics 7-9

Month	*Eptesicus serotinus*	*Myotis species*	*Pipistrellus pipistrellus*	*Pipistrellus pygmaeus*	*Rhinolophus ferrumequinum*
Apr	21	13	3343	338	1
May	18	47	8013	584	2
Jun	53	38	11024	296	10
Jul	342	33	15195	2133	17
Aug	144	135	7254	673	8
Sep	1465	597	10338	1195	12
Grand Total	**2043**	**863**	**55167**	**5219**	**50**

Value of the habitat for foraging and commuting bats

The value of the habitat for foraging and commuting bats was assessed. The scores in tables 21 and 22 assume individual bats of the Annex II species: greater horseshoe as found by the static monitoring survey.

Table 21: Scores for land at Alderholt foraging habitat (bold indicates the relevant criteria)

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
Common (2)	Individual bats (5)	None (1)	Industrial or other site without established vegetation (1)
-	-	**Small number (3)**	Suburban areas or intensive arable land (2)
Rarer (5)	**Small number of bats (10)**	Moderate number/Not known (4)	**Isolated woodland patches, less intensive arable and/or small towns and villages (3)**
-	-	Large number of roosts, or close to a SSSI for the species (5)	Larger or connected woodland blocks, mixed agriculture, and small villages/hamlets (4)
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Mosaic of pasture, woodlands and wetland areas (5)
20	10	3	3
Total score			36

Table 22: Score for land at Alderholt commuting habitat (bold indicates relevant criteria)

Species	Number of bats	Roosts/potential roosts nearby	Commuting habitat characteristics
Common (2)	Individual bats (5)	None (1)	Absence of (other) linear features (1)
-	-	**Small number (3)**	Unvegetated fences and large field sizes (2)
Rarer (5)	**Small number of bats (10)**	Moderate number/Not known (4)	Walls, gappy or flailed hedgerows, isolated well-grown hedgerows, and moderate field sizes (3)
-	-	Large number of roosts, or close to a SSSI for the species (5)	**Well-grown and well-connected hedgerows, small field sizes (4)**
Rarest (20)	Large number of bats (20)	Close to or within a SAC for the species (20)	Complex network of mature well-established hedgerows, small fields and river/streams (5)

Species	Number of bats	Roosts/potential roosts nearby	Commuting habitat characteristics
20	10	3	4
Total score			37

Using the scoring system above, the foraging and commuting routes across the site are considered to be of regional importance for bats. Greater horseshoe bats were recorded in low numbers during every static monitoring session on transect 1 and transect 3. Increased activity was recorded on transect 3 during June and July with a peak of 17 passes and on transect one during August and September with a peak of 8 passes.

This is considered to be a low number of passes compared to other bat species using the site as over the period of survey with the average number of passes per day it averaging out at one to two passes a night. However, due to greater horseshoe bats being considered rare in the region, 50 passes recorded during the static monitoring suggests the site holds regional importance for this species.

Additionally, a known greater horseshoe roost is present near Blashford, approximately 4 kilometres south of the site. No greater horseshoe roosts are known to exist within 3 kilometres of the site thus the site itself does not fall within any core sustenance zones, however with the close proximity of a roost, evidence of commuting and potential foraging on site highlight the importance of safeguarding habitat features in the area for greater horseshoe bats.

Based on the numbers of more common bat species the site is also considered to hold regional level importance for bats species in general.

Further recommendations have been made in section 5.5. to safeguard the continued use of the site by greater horseshoe bats and other bat species.

Breeding birds

The results of the breeding bird surveys are provided below in table 22 with territories shown on the plan in appendix XII. Sixty-six species were recorded on site and adjacent to the site, twelve of which are listed as red list species, fourteen as amber list species and ten as UKBAP priority species. Three bird species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) were recorded on site although none of these birds were breeding.

A total of twenty-five species were confirmed as breeding on site including three red list species, two amber list species and three UKBAP species. Three species were classified as probable breeding on site, whilst five species were classified as possible breeding on site, including three amber list species including bullfinch (*Pyrrhula pyrrhula*), green woodpecker (*Picus viridis*) and willow warbler (*Phylloscopus trochilus*).

Although the site comprises mostly arable habitats, no species of conservation concern linked with arable habitat were considered to be breeding on site. This is likely to be due to the intense management of the farmland. A single yellowhammer (*Emberiza citrinella*) was recorded on two occasions but was not displaying any breeding behaviour and on both occasions was recorded close to more suitable habitat to the west of the site. Four skylark (*Alauda arvensis*) were also recorded during the first survey in February and it is likely that these birds were using the site for foraging during a cold spell of weather.

As expected, breeding territories were concentrated around the hedgerows and tree lines that form the boundaries of the agricultural fields. A high concentration of breeding territories was recorded in the area of broad-leaved woodland in the south-east of the site, with confirmed territories including nuthatch (*Sitta europaea*), treecreeper (*Certhia familiaris*), coal tit (*Periparus ater*) and goldcrest (*Regulus regulus*) among others. Starlings (*Sturnus vulgaris*), a red list and UKBAP species, were recorded in relatively high number during each survey, but no nests were recorded on site. It is likely that this species is breeding in residential properties to the north of the site and using the site for foraging.

A total of six dunnock (*Prunella modularis*) territories were recorded in the hedgerows in the north of the site. Dunnock is an amber list species, however they are considered a very common and widespread breeding resident within Dorset. The site is therefore not considered to be of importance for this species.

Two song thrush (*Turdus philomelos*) territories were recorded on site, whilst one further territory was recorded in habitat immediately adjacent to the north-western boundary of the site. One on-site territory was recorded in scrub surrounding a pond in the south-west of the site, whilst the other territory was recorded in an area of broad-leaved woodland in the south east of the site. Song thrush is listed as a UK BAP priority species and is also a red list species, however they are considered a common and widespread breeding species within Dorset. The site is therefore not considered to be of importance for this species.

Two confirmed house sparrow territories were recorded in dilapidated farm buildings on site. One of these territories was recorded in a large barn on Sleepbrook Farm (building 1), whilst the other territory was recorded in a small single-storey building on Oak Tree Farm (building 3). House sparrow are considered a common but declining breeding resident in Dorset. Recommendations have been made in section 5.6 to ensure this declining species is not adversely affected by the proposals.

One mistle thrush (*Turdus viscivorus*) territory was recorded in the vicinity of mature trees close to the track that leads up to Warren Park Farm from Ringwood Road. Mistle thrush territories are large and therefore an exact location of a potential nest is difficult to locate and it is possible that a nest could be outside of the site boundary. Mistle thrush is a red list species but is considered a common breeding resident in Dorset. The site is therefore not considered to be of importance for this species.

One mallard (*Anas platyrhynchos*) territory was recorded on site, whilst a further territory was confirmed off site in the large fishing lake in the south of Warren Park Farm. The on-site territory was recorded in a small pond within an area of broad-leaved woodland in the south east of the site. Mallard is an amber list species but is considered a very common breeding resident in Dorset. The site is therefore not considered to be of importance for this species.

Firecrest (*Regulus ignicapillus*), a Schedule 1 and amber list species, was recorded singing during the fourth and fifth surveys in the plantation woodland to the south west of the site. Cuckoo (*Cuculus canorus*), a red list and UKBAP species, was also recorded singing during the fourth and fifth surveys on Cranborne Common to the west of the site. Both firecrest and cuckoo are considered to be probable breeders but outside of the site boundary, and therefore these species will not be adversely affected by the proposals.

Fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*), two species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), were also recorded foraging on site during the first and second breeding bird surveys before they migrated to their breeding grounds. This species only breeds within the UK in very limited numbers and these records are of over wintering birds and therefore the Schedule 1 status is not relevant for these records.

The fields in the west of Warren Park Farm were often used as foraging habitat by gull species. During the fourth breeding bird survey, thirty-two herring gulls (*Larus argentatus*) and fifteen lesser black-backed gulls (*Larus fuscus*) were recorded foraging in these fields. Herring gulls are a red list and UKBAP species, whilst lesser black-backed gulls are an amber list species. Graylag goose, an amber list species, Canada goose and a maximum count of 185 rook were also recorded foraging in these fields.

A full list of every species recorded during the breeding bird surveys is provided in table 23 below.

Table 23: Birds recorded on site during the breeding bird surveys

Species	Latin name	Notable status	Max count	Number of visits recorded	Breeding status
Reed bunting	*Emberiza schoeniclus*		1	1	Possible breeding on site.
Sparrowhawk	*Accipiter nisus*		1	1	Non-breeding record.
Long-tailed tit	*Aegithalos caudatus*		11	5	Confirmed breeding on site.
Skylark	*Alauda arvensis*	Red List BoCC, UK BAP	4	1	Non-breeding record.
Egyptian goose	*Alopochen*		7	3	Non-breeding

Species	Latin name	Notable status	Max count	Number of visits recorded	Breeding status
	aegyptiacus				record.
Mallard	*Anas platyrhynchos*	Amber List BoCC	16	5	Confirmed breeding on site.
Graylag goose	*Anser anser*	Amber List BoCC	8	1	Non-breeding record.
Meadow pipit	*Anthus pratensis*	Amber List BoCC	22	2	Non-breeding record.
Swift	*Apus apus*	Amber List BoCC	6	2	Non-breeding record.
Grey heron	*Ardea cinerea*		2	3	Non-breeding record.
Tufted duck	*Aythya fuligula*		2	1	Non-breeding record.
Canada goose	*Branta canadensis*		11	2	Non-breeding record.
Buzzard	*Buteo buteo*		5	5	Probable breeding on site, though no nest recorded.
Linnet	*Carduelis cannabina*	Red List BoCC, UK BAP	4	4	Non-breeding record, recorded flying over site.
Goldfinch	*Carduelis*		46	5	Confirmed breeding on site.
Greenfinch	*Carduelis chloris*		8	5	Confirmed breeding on site.
Siskin	*Carduelis spinus*		32	3	Non-breeding record, likely breeding in plantation south of site.
Treecreeper	*Certhia familiaris*		2	3	Confirmed breeding on site.
Wood pigeon	*Columba palumbus*		34	5	Confirmed breeding on site.
Raven	*Corvus corax*		1	1	Non-breeding record.
Carrion crow	*Corvus corone*		19	5	Foraging on site with nests suspected close to site.
Rook	*Corvus frugilegus*		185	3	Non-breeding record. Large number recorded using fields for foraging.

Species	Latin name	Notable status	Max count	Number of visits recorded	Breeding status
Jackdaw	*Corvus monedula*		20	3	Non-breeding record, recorded flying over site.
Cuckoo	*Cuculus canorus*	Red List BoCC, UK BAP	1	2	Non-breeding record. Probable breeding to west of site.
Blue tit	*Cyanistes caeruleus*		19	5	Confirmed breeding on site.
Mute swan	*Cygnus olor*	Amber List BoCC	2	1	Non-breeding record.
Great spotted woodpecker	*Dendrocopos major*		1	2	Probable breeding on site.
Yellowhammer	*Emberiza citrinella*	Red List BoCC, UK BAP	1	2	Non-breeding record.
Robin	*Erithacus rubecula*		17	5	Confirmed breeding on site.
Kestrel	*Falco tinnunculus*	Amber List BoCC	1	2	Non-breeding record.
Chaffinch	*Fringilla coelebs*		37	5	Confirmed breeding on site.
Snipe	*Gallinago gallinago*	Amber List BoCC	3	1	Non-breeding record.
Moorhen	*Gallinula chloropus*		4	4	Confirmed breeding on site.
Jay	*Garrulus glandarius*		5	2	Non-breeding record.
Swallow	*Hirundo rustica*		20	3	Non-breeding record. Confirmed breeding in farm buildings outside of site boundary.
Herring gull	*Larus argentatus*	Red List BoCC, UK BAP	32	2	Non-breeding record.
Lesser black-backed gull	*Larus fuscus*	Amber List BoCC	15	2	Non-breeding record.
Black-headed gull	*Larus ridibundus*	Amber List BoCC	51	3	Non-breeding record.
Pied wagtail	*Motacilla alba*		7	5	Confirmed breeding on site.
Grey wagtail	*Motacilla cinereal*	Red List BoCC	3	1	Non-breeding record.
Wheatear	*Oenanthe*		1	1	Non-breeding record.
Great tit	*Parus major*		22	5	Confirmed

Species	Latin name	Notable status	Max count	Number of visits recorded	Breeding status
					breeding on site.
House sparrow	*Passer domesticus*	Red List BoCC, UK BAP	31	5	Confirmed breeding on site.
Coal tit	*Periparus ater*		4	3	Confirmed breeding on site.
Cormorant	*Phalacrocorax carbo*		1	1	Non-breeding record.
Pheasant	*Phasianus colchicus*		13	5	Confirmed breeding on site.
Chiffchaff	*Phylloscopus collybita*		9	5	Confirmed breeding on site.
Willow warbler	*Phylloscopus trochilus*	Amber List BoCC	7	1	Possible breeding on site, likely recorded on passage.
Magpie	*Pica pica*		5	4	Confirmed breeding on site.
Green woodpecker	*Picus viridis*	Amber List BoCC	1	1	Possible breeding on site.
Dunnock	*Prunella modularis*	Amber List BoCC, UK BAP	8	5	Confirmed breeding on site.
Bullfinch	*Pyrrhula*	Amber List BoCC, UK BAP	1	1	Possible breeding on site.
Firecrest	*Regulus ignicapillus*	Schedule 1, Amber List BoCC	1	2	Non-breeding record. Probable breeding in woodland south of site.
Goldcrest	*Regulus regulus*		4	4	Confirmed breeding on site.
Stonechat	*Saxicola torquata*		1	1	Non-breeding record.
Nuthatch	*Sitta europaea*		3	4	Confirmed breeding on site.
Collared dove	*Streptopelia decaocto*		2	1	Possible breeding on site.
Starling	*Sturnus vulgaris*	Red List BoCC, UK BAP	88	5	Non-breeding record. Confirmed breeding in buildings outside of site boundary.
Blackcap	*Sylvia atricapilla*		6	5	Confirmed breeding on site.
Common whitethroat	*Sylvia communis*		1	2	Probable breeding on site.

Species	Latin name	Notable status	Max count	Number of visits recorded	Breeding status
Wren	*Troglodytes troglodytes*		16	5	Confirmed breeding on site.
Redwing	*Turdus iliacus*	Schedule 1, Red List BoCC	76	2	Non-breeding record.
Blackbird	*Turdus merula*		18	5	Confirmed breeding with multiple territories.
Song thrush	*Turdus philomelos*	Red List BoCC, UK BAP	3	5	Confirmed breeding on site.
Fieldfare	*Turdus pilaris*	Schedule 1, Red List BoCC	16	2	Non-breeding record.
Mistle thrush	*Turdus viscivorus*	Red List BoCC	2	4	Confirmed breeding on site.

A total of twenty-five species were confirmed as breeding on site, whilst three species were probable breeding and five species were possible breeding. The site provides good foraging habitat for a wide range of species. The site is therefore considered to be of district importance for birds in the area.

The site supports a breeding assemblage of birds of district importance. Further recommendations have been made in section 5.6.

Nightjar

Dorset Heaths SPA and Ramsar site and Ringwood Forest and Home Wood are known to support important populations of breeding nightjar. These sites are located 200 metres to the west of the site and directly adjacent to the south-western site boundary respectively. Although typical habitat for nightjars is not present on site, surveys were undertaken to ensure nightjars were not breeding on site to establish any potential impacts on this species and which areas were the most important for these birds.

An individual churring nightjar was recorded to the south of the site in the Ringwood Forest and Home Wood area during the survey on the 25th June and 10th July 2019. No nightjar were recorded using the site for commuting or foraging. The site is not considered to be regularly used by nightjar with the wider environment to the south and west of the site providing much better breeding and foraging habitat for nightjar.

Further recommendations have been made in section 5.6.

Dormice

Eight records of hazel dormice were returned by HBIC within 2 kilometres of the site. A European Protected Species (EPS) licence was obtained to disturb breeding habitat 1.0 kilometre to the south east of the site which is connected to the site by continuous hedgerows and woodland. Furthermore, the hedgerows present on site are considered to be of good foraging quality for supporting hazel dormice, with hazel, honeysuckle and bramble present.

Further surveys were conducted, however, dormice were not recorded on the site. The results of the dormice survey are provided in table 24 below.

Table 24: Dormice survey results

Visit	Date	Time	Weather	Temp (°C)	Results
1 Colin	03/05/19	10.00	Warm dry cloud 4/8 wind 1/12	16 °C	No dormice found - all boxes empty
2 Sarah	21/06/19	10:20	Warm, dry, cloud 1/8, wind 1/12	20 °C	No dormice found - all boxes empty
3 Helen	01/07/19	10:00	Warm, dry, cloud 1/8, wind 0/12	17 °C	No dormice found - all boxes empty
4 Colin	12/08/19	9:30	Warm dry cloud 6/8 wind 1/12	16 °C	No dormice found - all boxes empty
5 Sarah	30/09/19	10:30	Overcast, dry, cloud 6/8, wind 2/12	16°C	No dormice found - all boxes empty

No evidence of dormice was recorded therefore, no further action is required.

Great crested newts

No records of great crested newt were returned by either DERC or HBIC within 2 kilometres of the site, however suitable habitat was identified on site to support the species.

Terrestrial habitat

The grasslands, field margins and hedgerows provide potential foraging habitat for great crested newts, with the bases of hedges providing potential refuge sites.

Aquatic habitat

Twenty-one waterbodies were recorded on and within 500 metres of the development, during a walkover survey and from aerial photographs. A map is provided in appendix XIV to show the pond locations. These are connected to the site by hedgerows.

Habitat suitability index

Landowner authorisation was given to perform HSI on seventeen of these waterbodies. Table 25 below outline the location, general description and HSI results.

Table 25: Surveyed waterbodies on site and within 500 metres of the site

Waterbody number	Grid reference	General description	HSI score	Waterbody suitability
W9 (25 metres north from the northern boundary	SU 11795 11827	Shaded pond within a woodland of approximately 22 by 15 metres which dries sometimes, with a moderate water quality. No fish nor waterfowl was noted at the time of the survey and 20% macrophyte cover.	0.73	Good
W10 within site boundary, north west of the site	SU 11784 11707	Dry draining ditch by agricultural land used at low intensity and tree line measuring approximately 580 by 1 metre.	0.66	Average
W11 (within site boundary north of site)	SU 12270 11864	Network of dry draining ditches by the fields and stables of a horse-riding school, measuring approximately 780 metres long by 0.5 metres wide with over 50 % macrophyte cover.	0.65	Average
W13 (130 metres south of the site boundary)	SU 12410 11427	Pond located in an open area and by a willow carr. The pond measures approximately 17 by 70 metres and dries rarely. The water quality is good, abundant common reed and bulrush grow within the pond, shading it at over 80%. Waterfowl may use the pond rarely, whilst no fish was recorded.	0.88	Excellent
W14 (135 metres south of the site boundary)	SU 12431 11374	Large angling pond which never dries, the water quality is moderate and the pond supports a large number of carp and other fish species. The pond also supports large number of waterfowl and hold vegetation on its banks. The pond is located within a few metres of W13, and surrounded by woodland.	0.22	Poor
W21 (within the site boundary, west of the site)	SU 11774 11106	Large landscaped, ornamental pond, some willow scrub, bramble on banks, measuring approximately 70 by 25 metres which never dries with a moderate water quality. Possible fish and waterfowl using the pond and 5% macrophyte cover.	0.78	Good
W22 (160 metres south	SU 12103 11191	Large angling pond which never dries, the water quality is moderate, and the pond	0.20	Poor

Waterbody number	Grid reference	General description	HSI score	Waterbody suitability
of the site)		supports a large number of carp and other fish species. The pond also supports large number of waterfowl and hold vegetation on its banks. The pond is located within a few metres of W13 and surrounded by woodland.		
W23 (460 metres south of the site	SU 12094 11860	Small pond in woodland clearing, fed by small stream measuring approximately 13 metres long by 6 metres wide with over 40 % macrophyte cover, minor presence of waterfowl was noted	0.75	Good
W24 (370 metres south of the site	SU 12530 11284	Large pond of very irregular shape, flooded area enclosed in hilly woodland, willow and birch growing in basin, the pond measures approximately 60 by 40 metres, it dries sometimes and has 15% macrophyte cover.	0.77	Good
W26 (410m south east of field 1)	SU 12812 11693	Large pond, surrounded by scrub and mature trees, steep slope, measuring 30 by 6 metres. The water quality is good, with minor fowl present and 10% macrophyte cover.	0.79	Good
W27 (within the site boundary, south east of the site	SU 12904 11637	Pond located in an open area and by a willow carr. The pond measures approximately 7 by 5 metres and dries frequently. The water quality is good with approximately 5% macrophyte cover.	0.49	Poor
W28 (492m south west of field 3)	SU 12886 11616	Landscaped pond in woodland of caravan park area, measuring 10 by 7 metres. The pond never dries and holds moderate water quality and supports notably bulrush and 10% macrophyte.	0.69	Average
W29 (On south eastern boundary	SU 12917 11592	Pond located in an open area and by a willow carr, which provides 70% shade and dries frequently. The pond measures approximately 6 by 4 metres and dries rarely. The water quality is good, with no macrophyte cover. No waterfowl nor fish was recorded.	0.49	Poor
W30 (473m south west of field 3)	SU 12877 11574	Large flooded depression within a willow carr, willow growing in basin which provides 70% shade. The pond measures approximately 40 by 30 metres and dries sometimes. The water quality is good, with 2% macrophyte cover No waterfowl nor fish were recorded.	0.71	Good

Waterbody number	Grid reference	General description	HSI score	Waterbody suitability
W32 (Within site south, approximately 150 metres east of W21	SU 12037 11120	Trial pit recently dug measuring three metres by two metres, approximately 0.5 metres deep, gravel substrate and some algal growth was identified on the surface, with some annual meadow grass sparsely recorded on the banks	0.54	Below average
W34	SU 12883 11523	Large flooded depression within woodland, willow growing in basin, measuring 70 by 12 metres. Willow, rowan and birch growing in basin. The water quality is good, 5% macrophyte cover was recorded	0.81	Excellent
W35	SU 12945 11513	Large flooded depression in a woodland by path which dries rarely, of very irregular shape, Willow and birch growing in basin. the water quality is good, 5% macrophyte cover was recorded	0.84	Excellent

All the waterbodies were considered to be average, good or have excellent suitability to support great crested newts with the exception of W22, W27 and W29 which were poor and W32 which was below average.

A rapid risk assessment was undertaken to determine the likelihood of an offence occurring should great crested newt be found to be present within nearby ponds and ditches. This is presented in table 26.

Table 26: Rapid risk assessment of the likelihood to affect great crested newts while developing the site

Component	Likely effect	Notional offence probability score
Great crested newt breeding pond(s)	Damaged or destroyed	1
Land within 100m of any breeding pond(s)	0.5 - 1 ha lost or damaged	0.7
Land 100-250m from any breeding pond(s)	>10 ha lost or damaged	0.7
Land >250m from any breeding pond(s)	>10 ha lost or damaged	0.5
Individual great crested newts	No effect	0
Maximum:		1
Rapid risk assessment result:	**RED: OFFENCE HIGHLY LIKELY**	

The rapid risk assessment concluded that in the event of great crested newt being present within the surrounding landscape, the development of the site is likely to result in the killing or injury of the newts. Similarly, it is considered that the grassland habitats within the site represent a significant area of foraging habitat for this species within the landscape and the loss of the grassland could represent significant habitat loss.

eDNA

Twelve ponds of the seventeen potential waterbodies were identified as having average or above potential to support great crested news and therefore were tested using eDNA. EDNA testing was undertaken on twelve ponds listed in the table below. The water samples for waterbodies W10, W13 and W26 and W28 all returned a positive result containing great crested newt DNA. All other waterbodies had negative results

Aquatic surveys

Aquatic surveys were undertaken on the ponds holding average or above potential to support great crested news, full survey results are presented in appendix XVI, whilst a map summarising the result is presented in appendix XV. These started prior the eDNA results were obtained, once these obtained further aquatic surveys were continued on the ponds having returned positive eDNA testing. A summary of these survey is presented table 27 below. To summarise the area holds a small metapopulation of great crested newts (English Nature, 2001) with a maximum total count of 3 great crested newts recorded on 29th April 2019. The area also supports a medium metapopulation of smooth newts and palmate newts.

Table 27: summary of waterbody supporting great crested newts on site and within 500 metres

Waterbody	eDNA positive?	Date and numbers of great crested newt recorded[15]					
		15/04/19	29/04/19	08/05/19	13/05/19	30/05/19	11/06/19
W9	No	0	0	0	0	0	0
W10	Yes	0	0	0	0	0	0
W11	No	0	0	0	0	0	0
W13	Yes	0	0	0	0	0	0
W21	No						
W23	No	0	0	0	0	0	0
W24	No	0	0	0	0	0	0
W26	Yes	0	0	0	0	0	0
W28	Yes	0	3	1	1	1	0
W30	No	0	0	0	0	0	0

[15] This is the maximum count recorded from either bottle trapping or torch counts

Waterbody	eDNA positive?	Date and numbers of great crested newt recorded[15]					
		15/04/19	29/04/19	08/05/19	13/05/19	30/05/19	11/06/19
W35	No	0	0	0	0	0	0
Total		0	3	1	1	1	0

A low population of great crested new was recorded in W28 located within the site boundary. W10 and W26 also located within the site boundary and W13, located 130 metres to the south of the site, support non-breeding populations and may only facilitate the movement of great crested newt around the site, whilst W28 is a breeding pond. The species will also use habitat present on site in their terrestrial phase, due to the good habitat connectivity to the site and the presence of approximately 38 waterbodies ditches within one kilometre of the site. Further recommendations have been made in section 5.7.

Reptiles

Suitable reptile habitat is present on the site in the form of semi-improved and improved grassland, which could be used for foraging. Basking opportunities are provided on the interface between tall and short sward heights between semi-improved grassland, bases of hedgerows, woodland and vegetation around ponds. The site is also connected to suitable reptile habitat with the adjacent woodlands, nearby heathland and similar open grasslands and farmland in the vicinity.

However, only the common species, slow worm, grass snake, adder and common lizard are likely to be present. Sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) are strongly associated with heathland, which is not present on site, therefore it would be unlikely to find these two species.

Reptile surveys were undertaken between May and June 2019. The site supported low populations of common lizard, grass snake and slow worm. The maximum count for common lizards was four adults. The maximum adult count for slow worms was five. One juvenile grass snake was recorded. These all represent low populations according to Froglife (2015). Hotspots for reptiles were the south-western site boundary and alongside the large pond on Warren Park Farm. Appendix XV indicates the areas where reptiles were recorded, and the full survey results are presented below in table 28.

Table 28: Reptile survey results

Visit	Date	Time	Weather	Temp (°C)	Common lizard	Slow worm	Grass snake	Area recorded
1 Sarah	29/04/19	12:00 – 15:45	Warm and dry	16°C	2 adults	3 adults		All recorded in the same area of Warren Park Farm near water body and woodland.
2 Colin	03/05/19	10.00 – 15:00	Warm dry cloud 4/8 wind 1/12	15°C	4 adults	5 adults		Slow worms found on west and south of water body and common lizards found west side of small pond
3 Stuart & Sarah	07/05/19	12:30 – 16:30	Warm, dry, overcast 7/8, 1/12	15°C		1 adult		Warren Park Farm, furthest southerly point of site
4 Sarah	20/05/19	10:00 – 16:15	Warm and dry (had rained previously)	14°C	3 adults	1 adult		All recorded in the same southern-most area of Warren Park Farm near water body and woodland. These mats have been damaged and some destroyed by ploughing.
5 Sam & Matt	17/06/19	11:00 – 15:30	Warm, dry. 7/8, 3/12	16°C	3 adults	4adults 1 juvenile	1 juvenile	3 slow worms and 1 juvenile grass snake found in south west boundary of Warren Park Farm. 3 common lizards and 1 juvenile slow worm found to west of large pond on Warren Park Farm. 1 adult slow worm was recorded on the north western site boundary of Sleepbrook Farm.
6 Alex S & Sarah	21/06/19	10:00-15:00	Mild, dry sunny spells 6/8, 1/12	17°C	0	0	0	No reptiles – fields had been ploughed and mats disrupted
7 Alex.S	24/06/19	9:45 – 15:30	Overcast, became clearer throughout the day. 8/8, 2/12	19°C	2 adults	2 adults 2 juveniles		1 common lizard and 2 adult slow worms were recorded in the south west of Warren Park Farm near water body and woodland. 2 juvenile slow worms were recorded in the small field between Sleepbrook Farm and Oak Tree Farm. 1 common lizard was recorded in the northern? field of Sleepbrook Farm

Low populations of common lizard, grass snake and slow worm were recorded across the site. The main areas reptiles were encountered was in the southern area of Warren Park Farm and between Sleepbrook Farm and Oak Tree Farm. Further recommendations have therefore been made in section 5.8.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The site at Land at Alderholt is of moderate ecological value with common habitats such as native species-rich hedgerows and semi-improved grassland. The site supports a number of protected species including great crested newts and reptiles. The site also provides commuting and foraging habitat for the Annex II protected species, the greater horseshoe bats. Development of the land in the absence of mitigation is anticipated to have the following impacts:

- Impacts to the nearby designated sites through direct impacts from noise, visual disturbance, pollution or indirect impacts such as increased recreational pressure, spread of invasive species and cat predation.
- The loss of hedgerows important under UK BAP and possibly important under the Hedgerow Regulations 1997.
- The loss of parkland pond and native broadleaf woodland habitats important under UKBAP.
- The loss of trees, especially mature and veteran, which are important ecological feature under the Dorset Biodiversity Appraisal Protocol.
- Spread of WCA Schedule 9 invasive plant species Montbretia and three-cornered leek outside of the site.
- Loss of badger foraging habitat and potential risks to badgers during construction.
- The loss of foraging and commuting habitat for local bat populations through loss of habitat or disruption from light pollution including greater horseshoe bats.
- The loss of potential bat roosting habitat as a result of the removal of mature trees.
- The damage or destruction of active bird nests and the loss of nesting and foraging habitat for a 'district important' assemblage of breeding birds.
- The potential for death/injury of great crested newts, the loss of foraging and sheltering habitat.
- The potential for death/injury of protected reptile species and the loss of foraging and sheltering habitat for common lizard, grass snake and slow worm.

5.1 Designated sites

5.1.1 Dorset Heathlands SPA/Ramsar, Dorset Heaths SAC and Cranborne SSSI

The Conservation of Habitats and Species Regulations 2017 imparts duty on Local Planning Authorities (competent authorities) to carefully consider whether any proposals may have a significant effect on a European site, either alone or in combination with other plans or projects.

Cranborne Common SSSI, which is also designated under Dorset Heathlands SPA, qualifies for breeding Dartford warbler (*Sylvia undata*), nightjar (*Caprimulgus europaeus*) and woodlark (*Lullula arborea*) and overwintering hen harrier (*Circus cyaneus*) and merlin (*Falco columbarius*). Dorset Heathlands Ramsar was selected for supporting wet heath and acid mire, rare wetland plants and invertebrates, and high species richness and diversity. Dorset Heaths SAC was selected for its dry heath, wet heath and acid valley mire, *Molina* meadows, calcareous fens and oak woodlands. Species that are reason for selection include southern damselfly (*Coenagrion mercuriale*) and great crested newt.

The impacts which may affect the Dorset Heaths SAC include the changes to the hydrological regime that maintain wet heath, mires and pools and pollution of waters and base-rich streams that support southern damselfly. Dorset Heathlands SPA, Ramsar and Dorset Heaths SAC habitats are all susceptible to changes in air pollution (nitrogen deposition can cause compositional changes over time) and general pollution impacts. The SPA ground-nesting birds are particularly vulnerable to disturbance by recreational visitors and cat predation, and the heathland habitat itself is extremely vulnerable to accidentally or deliberately started fires. Urbanisation also increases the risk of introducing invasive species such as Japanese knotweed (*Fallopia japonica*) that can out-compete native vegetation and reduce breeding site availability for birds.

No part of the site falls within the boundaries of these European Protected Sites. At their closest point they are located 0.2 kilometres to the west of the site.

Potential indirect impacts during construction and operation from effects such as noise, lighting and dust, or introductions of invasive plant species may occur depending on the development size.

The production and implementation of a Construction Method Statement (CMS) would need to be implemented prior to the construction phase of any development. This would set out detailed methods of construction to avoid impacts to the designated site:

- Details of how materials / chemicals would be stored and controlled on-site to avoid pollution and siltation (for example, all plant will be fitted with drip trays in order to avoid potential pollution incidents and no re-fuelling will take place on the site).

- Details on the proposed construction methodology including factors such as construction access, methods of construction, timing of work and working hours.

- Dust and noise suppression methodology.

- Fencing will be erected along the boundary of the designated site prior to construction to prevent construction workers or plant from accessing the site.

In the absence of mitigation, increased disturbance to the nearby Dorset Heaths international sites by walkers, particularly dog walkers, may add additional pressure to nesting birds as well as physical damage through trampling.

Christchurch and East Dorset Adopted Core Strategy (East Dorset District Council 2014) include the following policies regards development and biodiversity, and the Dorset Heathlands:

Policy ME1

Safeguarding Biodiversity and Geodiversity

Where development is considered likely to impact upon particular sites, habitats or species as set out within the Dorset Biodiversity Protocol, it will need to be demonstrated that the development will not result in adverse impacts. In considering the acceptability of proposals, the Council will assess their direct, indirect and cumulative impacts relative to the significance of the features' nature conservation value.

National policy will be applied to ensure the level of protection afforded international, national and locally designated sites and species is commensurate with their status.
The following criteria should be addressed when development is proposed:

- *Avoidance of harm to existing priority habitats and species through careful site selection, artificial lighting design, development design and phasing of construction and the use of good practice construction techniques.*
- *Retention of existing habitats and features of interest, and provision of buffer zones around any sensitive areas.*
- *Enhancement of biodiversity through improving the condition of existing habitats and achieving net gains in biodiversity, where possible. Particular attention should be paid to priority habitats and species referred to in Section 41 of the Natural Environment and Rural Communities Act 2006 and the Dorset Biodiversity Strategy, and the Strategic Nature Areas identified on the Dorset Nature Map.*
- *Where harm is identified as likely to result, provision of measures to avoid or adequately mitigate that harm should be set out. Development should be refused if adequate mitigation or, as a last resort, compensation cannot be provided.*
- *Provision of adequate management of the retained and new features.*
- *Monitoring of habitats and species for a suitable period of time after completion of the development to indicate any changes in habitat quality or species numbers and put in place corrective measures to halt or reverse any decline.*

Policy ME2

Protection of the Dorset Heathlands

In accordance with the advice from Natural England, the evidence available to the authorities and Core Strategy Habitats Regulations Assessment (HRA), no residential development will be permitted within 400m of protected European and internationally protected heathlands.

Any residential development between 400m and 5km of these areas will provide mitigation through a range of measures as set out in the Core Strategy, Site Specific Allocations Development Plan Document and the Dorset Heathlands Planning Framework Supplementary Planning Document including:

- *Provision of on-site and off-site Suitable Alternative Natural Greenspace (SANG).*
- *Provision of other appropriate avoidance/mitigation measures.*

Christchurch and East Dorset adopted 'The Dorset Heathlands Planning Framework Supplementary Planning Document 2015-2020' in 2017. This document sets out financial contributions that are required for any new residential dwellings that are built between 400 metres and 5 kilometres of Dorset Heathlands international sites. Christchurch and East Dorset contribution is currently £241 per house and £164 per flat (Index Linked). There is also an administration fee of five per cent of these sums, subject to a minimum of £75 and a maximum of £1,000. This contribution is in addition to the provide contributions via Community Infrastructure Levy (CIL). In addition, the provision of SANG either on or off site is likely to be required as this is specified as expected mitigation for housing schemes of fifty or more units.

As the designated areas are only 0.2km from the site a number of SANGs will be required for the mitigation of developing within 400 metre to 5 kilometres from designated sites. SANGs will be incorporated into the plans in order to ensure that they provide a buffer zone of a minimum of 225 metres from the designated site boundaries and the developed areas on the site to create a buffer of 425 metres between the development and the designated sites.

There will be extensive soft landscaping within the proposals, including recreational opportunities for dog walking in greenspace provided in the dedicated SANG sections of the site (the total number of hectares required will be decided when the plans for the development have been finalised), reducing the likelihood for regular or daily use of the international sites. The designs for the SANG will be completed in consultation with Natural England and the County Council's Natural Environment Team.

SANGs should aim to supply a choice of circular walking routes that provide an attractive alternative to those routes on heathlands in the vicinity (i.e. those heaths that the SANG is designed to attract visitors away from). Given the average length of walks on heathland, a circular walk of 2.3-2.5 kilometre in length is necessary (Borough of Poole, Bournemouth Borough Council, Christchurch and East Dorset District Council, Dorset County Council, Purbeck District Council 2016).

However, it is also noted that the identification of SANGs should seek to avoid sites of high nature conservation value which are likely to be damaged by increased visitor numbers. Such damage may arise, for example, from increased disturbance, erosion, input of nutrients from dog faeces, and increased incidence of fires. Where sites of high nature conservation value are considered as SANGs, the impact on their nature conservation value should be assessed and considered alongside relevant policy in the core strategy/local plan (Borough of Poole, Bournemouth Borough Council, Christchurch and East Dorset District Council, Dorset County Council, Purbeck District Council 2016). This is important due to the high value habitat which the SANGs would support, which will be damaged by increased visitors.

The current draft SANGs design for the Alderholt site will involve walking routes though semi-improved grassland and the water courses, as well as skirting several areas of woodland. The design will need to be carefully considered to avoid impacts on protected species and important habitats.

The distance of recreational facilities is one of the most influential factors affecting the use of a public space. It is concluded that the provision of high-quality recreational amenities on residents' doorstep, combined with access to additional public space in the local area will significantly reduce any potential usage of the SPA/SAC by homeowners.

Additional mitigation could also take the form of leaflets to be distributed to the new homeowners to inform them of the sensitivity of the SPA/SAC and measures to reduce disturbance if visiting, such as keeping dogs on leads. New residents would be encouraged to utilise spaces away from the SPA/SAC by identifying public open spaces close to the new homes, including maps showing locations and suggested routes to these spaces, and photographs and descriptions of facilities and features of interest.

5.1.2 River Avon SAC, Avon Valley SPA and Ramsar

The River Avon SAC, River Avon System SSSI, Avon Valley SPA and Ramsar are located 1.7 kilometres to the east of the site. Due to the potential pollution that could infiltrate through to nearby watercourses and groundwater during any proposed construction, a CMS would need to be prepared and implemented. This would set out detailed methods of construction to avoid impacts to the River Avon.

Christchurch and East Dorset Joint Core Strategy (East Dorset District Council 2014) indicates that projects may need to consider water discharge into the River Avon SAC, recreational disturbance and pollution discharge into the river.

A principal threat to the habitats within the SAC is decreases in flow velocities and increases in siltation, in turn affecting macrophyte cover. Low flows interact with nutrient inputs from point sources to produce localised increases in filamentous algae and nutrient-tolerant macrophytes at the expense of *Ranunculus*. Where additional sewage

discharges to a STW cannot be accommodated without measures to offset phosphate loading, development will be required to undertake proportionate measures (which may include contributions towards those measures identified in the Nutrient Management Plan (David Tyldesley and Associates, 2015)) to demonstrate that any proposals would have no adverse effects upon the SAC.

During the design of a potential development, a drainage scheme would therefore need to be incorporated with surface water run-off management that will ensure any foul water is directed away from the River Avon and that there will be no hydrological changes caused by the development. There is potential for indirect adverse effects through pollution both during construction and post-construction from surface water run-off due to the increase in area of hard standing. These matters would be addressed in a CMS, detailed above in section 5.1.1.

Whilst the 1.7 kilometres would form a sufficient barrier between any pets kept by residents of any proposed housing, measures to prevent the introduction of non-native plant species through garden waste or simply through dissemination of garden plants through soil/rhizomes and seeds and to prevent introduction of non-native fish and aquatic invertebrates would be required. Effective garden waste collection protocols from homes on the development site will reduce the chance of invasive plants being introduced to the surrounding area. Additionally, information leaflets should be distributed to local residents informing them of these potential issues and how to prevent them from happening.

Brown trout (*Salmo trutta)* and Atlantic salmon (*Salmo salar*) reaction (behavioural and physical) to impact piling and to vibro piling has been shown to be significant between 20 and 70 metres from the point of origin (Nedwell *et. al.*, 2003, Postlethwaite, 2010 and URS, 2012). The zone of influence of construction noise on potential otter disturbance has been shown to be within 30 to100 metres depending on the construction activities (URS, 2012). As the site lies over 100 metres from the SAC, Ramsar, SPA and SSSI noise is not considered to be a potential impact on fish or otters.

5.1.3 New Forest SAC, Ramsar, SPA

The site is located 3.1 kilometres from the New Forest SAC, Ramsar and SPA which is designated for breeding nightjar (*Caprimulgus europaeus*), woodlark (*Lullula arborea*), honey buzzard (*Pernis apivorus*), Dartford warbler (*Sylvia undata*), hobby (*Falco subbuteo*) and wood warbler (*Phylloscopus sibilatrix*), as well as overwintering hen harrier (*Circus cyaneus*).

Noise and vibration disturbance and pollution during construction is not anticipated due to the designated site being over 3 kilometres away from the development site.

Provision of SANGs on and / or off site will be required to mitigate the impact of recreation and urban pressure on the SAC, Ramsar and SPA.

5.1.4 Non-statutory sites/ sites of local importance

Ringwood Forest and Home Wood SINC is immediately adjacent to the southern boundary of the site and Sleepbrook Farm SNCI is located 0.2 kilometres to the west. As has been outlined in section 5.1.1, having SANGs to provide a buffer between any areas designated or of significance to wildlife is required to safeguard these areas. Due to the location of the above mentioned SINC and SNCI, the SANGs incorporated for statutory sites will also aid in the protection of these areas. The measures included within the CMS will also minimise potential for adverse impacts during construction.

5.2 Habitat

5.2.1 Hedgerows

Summary of findings

All but one of the twenty hedgerows on the site have been identified as qualifying as a UKBAP with 80% coverage of native species and some are species rich with five or more woody species within them. They are also likely to qualify for protection under The Hedgerow Regulations 1997.

Implications of survey findings and recommendations for further action

If any hedgerows are planned for removal furthermore detailed hedgerows survey will be required to ascertain if the hedgerows qualify as 'Important' under the Hedgerow Regulations 1997. If assessed as 'Important', permission will be required from the Local Authority to remove sections of this hedgerow. If sections of UK BAP hedgerow and / or qualifying Hedgerow Regulations 1997 hedgerow are to be removed they will need to be replaced within the landscape design of the scheme using native species on at least a like for like basis. Each hedgerow will need to be assessed separately and mitigation provided per hedgerow. Buffer zones a minimum of 2 metres pre and post construction will also be required hedgerows must be protected.

Where replacement planting is required as mitigation, the length of the replacement hedgerow will be calculated using the multipliers set out in the Section C of the Dorset Biodiversity Compensation Framework (DBCF) (2018). Mitigation measures can include the restoration and enhancement of existing hedges, however a measurable upgrading of distinctiveness and / or condition must be demonstrated. In situations where a residual loss of hedgerows cannot be avoided, compensation payments will need to be made. This

is however, a last resort with the restoration and enhancement of hedgerows being preferable where possible.

5.2.2 Ponds

Summary of findings

A total of six ponds were recorded in the field survey and qualify as UK BAP. These are located south of the site. A total of 19 ditches were recorded and should be considered under the DBAP.

Implications of survey findings and recommendations for further action

Any ponds lost within the landscaping will be replaced on a 'like for like' basis as they are a BAP habitat. In cases where this is not possible, financial compensation can be considered as a last resort when the Local Planning Authority is minded to grant planning permission after the mitigation hierarchy: firstly, to avoid and secondly to mitigate, has been applied but a residual loss of habitat(s) persists.

For main rivers a minimum buffer zone of 8m must be provided with a minimum 5m buffer zone provided for non-main rivers, ditches, or ponds. Buffer zones start at the top of the bank not mid- channel. Furthermore, two of these ponds W26 and W28 are supporting great crested newts and should aimed at being retained in the landscape design.

Following the DBAP, a minimum 5m buffer zone should be provided for ditches and ponds, to avoid any potential impacts with buffer zones start at the top of the bank not mid-channel.

5.2.3 Wood pasture and parkland

Summary of findings

An area of parkland measuring approximately 2.4 hectares is located in the south-east of the site. The parkland supports mature or veteran scattered oaks (*Quercus robur*), which are up to ten metres high.

Implications of survey findings and recommendations for further action

As it is a UK BAP habitat, it will need to be replaced within the landscape design of the scheme using native species on at least a like for like basis. As the trees are mature, some may be veteran, it will be impossible to replace the habitat as it is currently standing. It is recommended to keep the habitat within the landscape design and to include it in the SANG required to mitigate for the impacts on designated sites as detailed in section 5.1.

5.2.4 Mature and veteran trees

Summary of findings

Numerous mature and veteran trees where recorded on site, as part of hedgerows, within the tree lines or scattered on site.

Implications of survey findings and recommendations for further action

Under the Dorset Biodiversity Appraisal Protocol, trees must be assessed for their own ecological value and as landscape and their importance to habitat connectivity and continuity. If any trees are proposed for removal the following must be observed:

- An assessment must be undertaken which must include consideration of the level of predicted impact during and post construction
- Any ancient semi-natural woodland habitat must have a minimum buffer of 20m
- Ancient, veteran and notable trees require special attention in accordance with the NPPF (2018) and British Standard BS. 5837:2012. Ancient and veteran trees are classed as irreplaceable habitats and must be assessed at the earliest possible stage in the design process with the presumption such trees will be retained. Veteran features such as dead wood and cavities provide valuable wildlife habitats for species such as bats, fungi, birds, invertebrates and lichen.
- An arboricultural report must be undertaken and produce to ensure a Tree Protection Plan has addressed ancient, veteran and notable trees which should almost always be included in Category A3 (high quality, cultural value including conservation). The design, protection and management will ensure their long-term retention.
- Root Protection Zones (RPZ) for ancient, veteran and notable trees will be calculated as an area with a radius 15 times the diameter of the tree at breast height or 5m beyond the crown whichever is the greater.
- Where appropriate, other trees (not currently ancient, veteran or notable) within the tree populations on site should be highlighted as the future Veteran and Notable trees and provided with appropriate mitigation / RPZs.
- Tree replacement will follow the recommended levels set by Bristol City Council (listed in the listed Planning Obligations Supplementary Planning Document 2012). Where trees will be felled for development, replacement will be dependent upon the size of the trees to be lost and in accordance with the following table:

Trunk of tree lost to development (cm) *	**No. of replacement trees required (all replacement trees must be 16-18cm girth)**
Less than 19.9	1
20 - 29.9	2
30 - 39.9	3
40 – 49.9	4
50 – 59.9	5

Trunk of tree lost to development (cm) *	No. of replacement trees required (all replacement trees must be 16-18cm girth)
60 – 69.9	6
70 – 79.9	7
80	8

- 50% of replacement or new trees will be large canopy trees such as oak, lime and beech.
- Replacement and new tree planting will include a combination of at least 75% British native including smaller canopy trees such as hawthorn, field maple, rowan, whitebeam, silver birch, crab apple, willow and 25% non-native such as fruit trees and sycamore to ensure ecological value and resilience.
- Where the grant of permission for development will result in the loss of a notable, veteran or ancient tree, the level of compensation tree planting required on-site will be calculated in accordance with recognised methodology Capital Asset Value Amenity trees (CAVAT).
- If tree replacement cannot be secured on-site then CAVAT will be used to determine the level of financial compensation required under the Dorset Biodiversity Compensation Framework.
- Furthermore, it is recommended to undertake invertebrate surveys before removal to ensure that no protected invertebrate species are lost on site.

5.2.5 Lowland deciduous mixed woodland

Summary of findings

Three stands of lowland deciduous mixed woodland have been recorded on site which measure approximately 1.9 hectares. These qualify as priority UKBAP habitat. The woodlands have a mature canopy locally dominated by willow species such as goat willow and pedunculate oak, with a sparse understorey comprising holly (*Ilex aquifolium*) and spindle (*Euonymus europaeus*). The ground flora is also limited with a few ancient woodland indicators which were recorded in drier areas, such as locally abundant English bluebell (*Hyacinthoides non-scripta*) and occasional greater stitchwort (*Stellaria holostea*).

Implications of survey findings and recommendations for further action

Ideally all of the woodland habitat will be retained within the design of the proposals, and this is the case in the preliminary designs that have been produced to date. However, where it is not possible to retain all of the woodland, the replacement of the area of woodland lost to land take, will either need to be incorporated within the soft-landscaping of the proposals or alternatively off-site compensation will be required. The residual loss of woodland will be subject to the Dorset Compensatory Framework Assessment. The

following metrics are applicable to this habitat type, and the total loss in hectares will be multiplied by the following:

- Risk metric of 1.5 (based on lowland mixed deciduous woodland).
- Spatial metric of 3 (based on a worst-case scenario, if the created habitat will not significantly contribute to an ecological network).
- Time metric of 3 (based on mature woodland).

Any residual loss of woodland will therefore be calculated using these metrics. Where off-site compensation is not possible, as a last resort the metric above will be applied to calculate a financial contribution through the Dorset Compensatory Framework. The financial contribution for woodland at the time of writing is £4448 per hectare.

5.3 Invasive species

5.3.1 Removal of Montbretia and three-cornered leek

Monbretia and three-cornered leek are both invasive species under Schedule 9 of the WCA (1981 as amended). Allowing these species to spread is therefore an offence.

Montbretia was identified in the north-west of the site adjacent to the rush pasture on Sleepbrook Farm. The plant is growing as understorey vegetation associated with hedgerow 9. Additionally, Montbretia was recorded in the eastern area of the site on Oak Tree Farm associated with hedgerow 15 which is located to the north-west of the poultry barns.

Three-cornered leek was recorded in the species-poor semi-improved grassland in the east of the site and also associated with hedgerow 10 to the north-east of Warren Park Farm.

Both species can be removed and managed in a similar way:

- Corms (bulb structures) and plant can be hand pulled/dug out making sure to remove all corm fragments.
- Corms left in the soil will re-sprout and will have to be monitored and pulled. All plant pieces will be properly discarded in thick plastic bags and transported to a landfill site.
- Composting is not an appropriate means of disposal as this may result in further distribution.

5.4 Badgers

5.4.1 Summary of findings

Surveys recorded evidence of badgers using the site for commuting and foraging.

5.4.2 Implications of survey findings and recommendations for further actions

As badgers have been confirmed to use the site, areas of habitat suitable for foraging must be retained on site and present in the SANGs.

Additionally, adherence to a Construction Management Plan to ensure pits are covered and work sites are safely fenced off to prevent wildlife getting trapped or injured during any works will be a requirement

5.5 Bats

5.5.1 Summary of findings

Data from the static monitoring and activity transects combined recorded a total of nine species of bat using the site. The hedgerows and treelines on site were identified as being used as commuting and foraging areas for bats in the local area. Appendix VIII provides a map of the areas of peak activity recorded during the activity surveys.

Greater horseshoe bats, an Annex II species, were recorded using the site, associated with areas of the site used as cattle and horse pasture. The most activity being recorded along the hedgerows and woodland fringes on the northern boundary of Sleepbrook Farm and hedgerows transecting cattle-grazed fields and the woodland south of Warren Park Farm. The site is considered to be of regional importance for bats and county importance to greater horseshoe bats.

5.5.2 Implications of survey findings and recommendations for further actions

The Bat Conservation Trust considers greater horseshoe bats to be nationally very rare (Collins, 2016). The magnitude and significance of any impact would depend on the nature and extent of the final development proposals. Site and landscape design should seek to minimise impacts and provide mitigation where impacts are unavoidable. Some general principles for impact avoidance and mitigation are outlined below.

Habitat retention, creation and connectivity

The development footprint should seek to minimise the amount of good quality habitat lost (particularly the connecting hedgerows, tree lines and area of woodland).

A suitably large area with connectivity to retained good-quality habitats should be set aside for habitat enhancement to offset any loss of hedgerows and lower quality foraging habitat. Habitat enhancement measures could include:

- Reversion of arable land to species-rich grassland.
- Filling in gaps and strengthening existing hedgerows.
- Planting additional hedgerows and new areas of woodland and scrub.
- Continued cattle and horse grazing within the SANG would continue to provide beetle food sources for horseshoe bats along with provision of dead wood.
- Provision of additional habitat features such as ponds.
- Installation of bat boxes on retained mature trees on the site boundaries.

Site design should ensure that connectivity across and around the site is maintained so that foraging or commuting bats are able to cross the site. 'Dark corridors' must be maintained in the areas of identified peak activity and in areas of woodland or scrub planting where no lighting is permitted would provide suitable foraging and commuting routes for bats. This is important as greater horseshoe bats will not cross gaps of greater than 15 metres although open fields are crossed after dusk on dark nights (Jones & Billington, 1999; Ransome, 1996).

Lighting

Horseshoe bats are intolerant to light (Stone *et al.,* 2009) and commuting corridors for greater horseshoes need to be maintained to ensure connectivity to foraging areas.

The impact of additional lighting as a result of the proposed development will be minimised through:

- Directing lighting to only where it is needed away from the hedgerow and trees.
- Through the design of the luminaire by using accessories such as cowls or hoods.
- Using light sources that emit minimal ultra-violet light, peak higher than 550nm and be of a warm/neutral colour <4,200 kelvin.
- LED luminaires should be used where possible.
- Restricting the height of the lighting columns to three metres or less.
- Land around the development should be screened from light pollution by a mixture of landscape planting (e.g. tree belts or dense hedgerow planting) or other screening options such as bunds and fencing. Landscape planting such as tree belts would also provide additional foraging habitat for bats.

- Light pollution should also be minimised by the use of modern lighting schemes and restrictions on private security lighting on properties adjacent to woodland or other bat foraging / commuting habitat (e.g. through planning measures such as covenants or similar enforceable restrictions).
- Lighting of residential roads should only be installed where it is explicitly needed for road or pedestrian safety or security reasons, such as at road junctions or pedestrian crossings.

5.6 Birds

5.6.1 Summary of findings

A total of twenty-five species were confirmed as breeding on site, and the breeding population is considered to be of district importance. The proposals for the site will cause temporary and permanent loss of nesting and foraging habitat for breeding bird species. Many of the confirmed breeding territories of protected birds fall within the proposed SANG on site.

5.6.2 Mitigation

The following mitigation will be implemented for breeding birds:

- The demolition of the farm buildings that have confirmed house sparrow territories on Sleepbrook Farm and Oak Tree Farm must take place outside of the bird nesting season, which is considered to extend from 1st March to 31st August. Sparrow terraces or integral sparrow bricks will be installed on the northern or eastern elevations of several of the proposed residential dwellings on site. Native shrub planting will also be included into the design scheme in order to provide foraging habitat for house sparrow.

- The clearance of any scrub and hedgerows should where possible be undertaken outside of the bird nesting season, this is considered to extend from the 1st March to the 31st August, or if this is not possible, must be done under the supervision of an ecologist to ensure that nesting birds are not harmed. Where nesting birds are encountered, clearance and/or demolition must be postponed until the nestlings have fledged.

- The provision of integral martin nest cups on the northern or western elevations of proposed residential buildings will help enhance the site for this species.

- The provision of integral swift bricks on the northern or western elevations of proposed residential buildings will help enhance the site for this species.

- The inclusion of wildlife ponds within the design scheme will provide good foraging habitat for a wide range of bird species as well as breeding habitat for mallard, an amber list species, and moorhen, both of which were confirmed breeding on site.

- The proposed SANG should be sown with a wildflower grass mix with some areas fenced off to provide suitable breeding habitat for skylark in order to broaden their local range.

- Ecological enhancement measures suggested in section 5.9 will provide foraging and nesting opportunities for many bird species and help mitigate for any loss of habitat for species breeding on site such as bullfinch and willow warbler.

5.7 Great crested newt

5.7.1 Summary of findings

HSI surveys were undertaken on seventeen ponds and wet ditches located on site and within 500 metres of the site. Eleven had an average or above score for suitability for the species, eDNA and aquatic surveys were conducted on these. These concluded that four ponds supported great crested newts in their aquatic phase. A low population of great crested newt was recorded on one pond: W28, only, the three other waterbodies, which had a positive eDNA: W10, W13 and W26 were recorded as supporting non-breeding populations.

5.6.2 Implication of survey findings and recommendations for further actions

The development of this site could result in the loss of one breeding pond and could result in the loss of over 10 hectares of terrestrial habitat for great crested newt that is located within 500 metres of the confirmed breeding pond. There are two options to mitigate for potential harm to great crested newt and habitat loss. In both cases an EPS licence will required.

1. Conducting a full exclusion / translocation from terrestrial habitat within 500 metres of the waterbodies supporting great crested newts. A plan indicating where habitat falls within this 500 metre zone has been provided in appendix XIV.

2. Applying for Natural England Policy 1 due to the presence of a small population and the development only impacting on poor great crested newt terrestrial habitat. This will allow to avoid undertaking a full translocation exercise, although a destructive search would be undertaken to minimise the risk of harming or killing

individual newts. Extensive habitat enhancement, including the creation of meadow and further ponds, will be undertaken, placing the emphasis on habitats provision rather than the costly instillation of exclusion fencing and extensive trapping effort. The habitat enhancement can be secured via a section 106 agreement.

The following principles should be adhered to for both of these licensing options:

- The development should aim to retain as much great crested newt habitat as possible.
- Any retained water bodies should be linked by terrestrial habitat which will need to be retained and enhanced via grassland over sowing, scrub planting and hibernacula creation.
- The mitigation strategy will require retained waterbodies to be enhanced by partial clearance of any encroaching vegetation around the pond boundaries, increasing the depth and clay puddling to maintain water levels throughout the year. A detailed strategy will be required once final plans are available and will be needed for the licence application.

5.8 Reptiles

5.8.1 Summary of findings

The south-western part of the site supports low populations of common lizard and slow worm and grass snake, whilst a low population of slow worm was also recorded in the north-west. The development of the site is likely to impact reptile populations on the site and mitigation has been provided below.

5.8.2 Implications of survey findings and recommendations for further action

The masterplan of the development should be designed to retain as much of the reptile habitat as possible. This would include the semi-improved grassland margins and hedgerows. Development within arable and improved pasture fields would have the least direct impacts on the reptiles present on the site. Currently, a SANG is planned in the south of the site which is where the majority of the reptiles were located.

The following measures will be required where reptiles fall within the construction zone of the development. Where they fall within SANG this will not be required, and current plans include the majority of reptile habitat within the SANG boundaries. The low population of slow worm in the north-west are likely to require the mitigation measures described below.

The site only supports a low number of reptiles therefore, areas identified as reptile hotspots (appendix XV) that are to be impacted will require a push and strim strategy. This will involve:

- The removal of any log piles or other features which may be used for refuge will be done by hand, and any reptiles present will be relocated to suitable habitat, that is not due to be developed. This will be carried out in temperatures above 10ºC when reptiles are more mobile (March to October) and under the supervision of a suitably experienced reptile handler.

- To encourage reptiles on the site to move away from the works area naturally the scrub and semi-improved grassland habitat within the works area will be made unsuitable by strimming under the careful supervision of a suitably experienced reptile handler. This will be carried out in temperatures above 10°C when reptiles are more active. The strimming will be carried out in a two strim cycle with the first cut to 15cm and the second to ground level. This cut will take place in one direction towards the suitable habitat on the boundary in order to give any reptiles a chance to leave the area.

- The root systems of trees and shrubs will be removed outside of hibernation period under the supervision of an experienced reptile handler.

- Slow worms will sometimes freeze instead of moving off and these animals should be carefully moved to the suitable habitat on the boundary before works can proceed again.

- All arisings from the strimming and clearance will be immediately removed from the works area to prevent any reptiles sheltering within it.

- The habitat within the works area will then be maintained at a short sward height to discourage reptiles from entering the works area.

Habitat within the retained area that will be developed into SANG will be enhanced for reptiles in order to ensure habitat is available to sustain the population of reptiles in the long-term. Enhancements to the retained area should be undertaken prior to any works commencing. The following measures will be implemented:

- Construction of hibernacula to increase opportunities for sheltering and hibernating reptiles. The number will be determined once the plans for the development have been drawn up.

- Creation of log piles to create places of shelter.

- Management and enhancement of habitat within this area to create optimum conditions for reptiles. Management and enhancement would seek to create a grassland / scrub mosaic.

5.9 Ecological enhancement

A few suggestions for ecological enhancements across the site have been made. In accordance with Dorset County Council Guidelines (2018) the majority of these will be requirements depending on the final development plan.

- 50% of the new houses are required to have integral bat boxes or tubes and the other 50% to have bird boxes.

Birds

- Provision of nest boxes or terraces for bird species such as swift (*Apus apus*), which were observed using the area and house sparrow (*Passer domesticus*) which were confirmed to have breeding territories on site. Either one 1 SP Schwegler Sparrow Terrace or one Cambridge Swift nest box (or similar design) on one of the walls of the building. Sparrows have declined due to lack of nesting opportunities. Sparrow terraces provide nesting space for three families of the social species. The terrace should be sited two metres or more above the ground and be installed on the surface of the wall using plugs and screws or installed directly into the wall.

- A lack of suitable nesting sites has led to a decline in swift populations. Swift boxes or bricks provides a long-term nesting solution. The 'box' comprises a concrete nesting chamber that is designed to go into a cavity and a half brick facing to blend into the external wall. Boxes should be sited at a height of at least five metres, with a clear flight path to the entrance. Should not be incorporated into south facing walls.

Bats

- Provision of one Schwegler 1FR Bat Tube or similar woodcrete bat box will be built into new houses facing onto open countryside to create roosting opportunities for crevice dwelling bats such as pipistrelle (*Pipistrellus* sp.) bats. This bat tube is suitable for bat species which inhabit buildings and is designed to be built into the masonry of an external wall. It can either be built flush with the wall or beneath a rendered surface. The tube is constructed from woodcrete and has an integrated wooden panel onto which bats can easily cling. The tube should be located so as to face towards open countryside.

- Bat and bird boxes can be purchased from https://www.nhbs.com or https://www.wildcare.co.uk/wildlife-nest-boxes/bat-boxes.html.

- Two bee bricks are required per house; they contain cavities which go part way into the brick with the back of the brick being solid. Solitary bees lay their eggs

in the cavity then use mud and chewed-up vegetation to block off the entrance. The offspring emerge the following spring and the cycle will begin again. Bee bricks should be placed at a minimum height of 1 metre in a warm sunny spot on a south-facing wall. No vegetation should obstruct the holes. Bee-friendly plants such as lavender (*Lavandula* sp.) and honeysuckle should be planted nearby as a food source otherwise it is unlikely that the brick will be used. Bricks can be purchased from https://www.nhbs.com.

Use of native shrubs and trees for landscaping schemes provides foraging habitat for a range of bird species. Suitable species include hazel, wild service tree (*Sorbus torminalis*) holly dog-rose (*Rosa canina*), rowan (*Sorbus aucuparia*), elder, blackthorn, eared willow (*Salix aurita*), hawthorn and field maple. Fruit trees must also be included in the landscaping.

- Flowering grassland seed mixes from a supplier of seeds of local provenance can be used to seed the new lawn within the design of the development (such as Emorsgate EL1). Such grassland provides greater plant diversity, provides better nectar sources for invertebrates and hence is of greater value for foraging birds, reptiles and amphibians.

- Provision of hedgehog (*Erinaceus europaeus*) houses will provide potential hibernation sites for hedgehogs. Hedgehog houses can be bought from http://www.wildcareshop.com. Hedgehog friendly gravel boards / holes (10cm x 10cm) in garden fencing between gardens in the development to allow hedgehogs to move freely throughout the site.

- The inclusion of wildlife ponds within the design of any proposals would enhance the area for local amphibians and invertebrate populations. The pond should be kept free of fish and planted with native British plant species such as water-plantain (*Alisma plantago-aquatica*), reed sweet-grass (*Glyceria maxima*) and yellow flag (*Iris pseudacorus*).

6.0 REFERENCES

Borough of Poole, Bournemouth Borough Council, Christchurch and East Dorset District Council, Dorset County Council, Purbeck District Council (2016) *The Dorset Heathland Planning Framework 2015-2020, Supplementary Planning Document*

Bright, P., Morris, P. and Mitchell-Jones, T. (2006) *The Dormouse Conservation Handbook*, 2nd Ed. English Nature.

Christchurch Borough and East Dorset District Council (2014) Christchurch and East Dorset Local Plan Part 1 - Core Strategy

Collins, J., Charleston, P., Davidson-Watts, I., Markham, S. and Kerslake, L. (2016). *Bat Surveys for Professional Ecologists Good Practice Guidelines*. Bat Conservation Trust, London.

Department for Communities and Local Government (2005). *Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.*

Dorset Environmental Record Centre (2019). Data search reference – DERC Alderholt.

English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. Under revision

Froglife (2015). S*urveying for reptiles. Tips, techniques and skills to help you survey for reptiles.* https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf

Fuller, R.J. (1980) *A method for assessing the ornithological interest of sites for conservation*. Biological Conservation 17: 229-239.

Hampshire Biodiversity Information Centre (2019). *Data search reference – HBIC Ref Land at Alderholt*.

Joint Nature Conservation Committee (2010). *Handbook for Phase I Habitat Survey.* JNCC.

Marchant, J.H. (1983) *Common bird census instructions*. BTO, Tring.

Ministry of Housing, Communities and Local Government (2019). *National Planning Policy Framework.*

Mitchell-Jones A.J. & McLeish A.P. (2004). *The Bat Workers' Manual (3rd Edition)* Joint Nature Conservation Committee

Multi-Agency Geographical Information for the Countryside (MAGIC) Website at www.magic.gov.uk

Natural Environment Team, Dorset County Council (2018). *Dorset Biodiversity Appraisal Guidelines.*

Oldham, R.S., Brady, L.D., Sewell, D.L. & Baker J.M.R. (2008). *ARG UK Advice Note 4: Great Crested Newt Habitat Suitability Index.* Amphibian and Reptile Groups of the United Kingdom.

Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000), *Evaluating the suitability of habitat for the Great Crested Newt (Trituris cristatus).* Herpetological Journal 10 (4), 143-155.

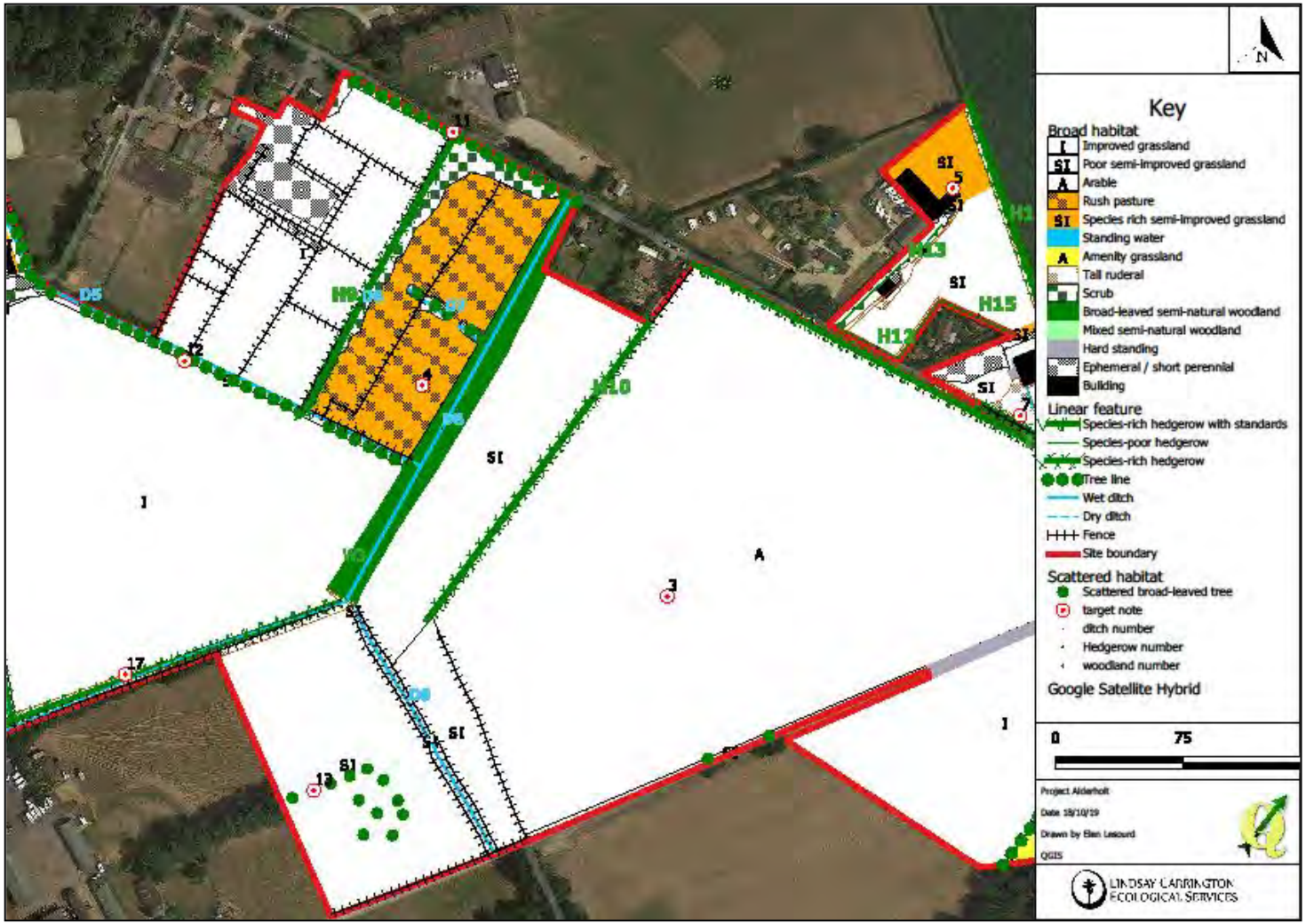
Ruddock & Whitfield (2007) A review of Disturbance Distances in Selected Bird Species, Scottish Natural Heritage.

Stone L, Jones G and Harris S (2009) Street Lighting Disturbs Commuting Bats, current biology, Vol 19, Issue 13, p1123-11.

Wray S, Wells D, Long E and Mitchell-Jones T (2010). *Valuing Bats in Ecological Impact Assessment*. In Practice December 2010, 23-25

APPENDIX I: Preliminary site plan

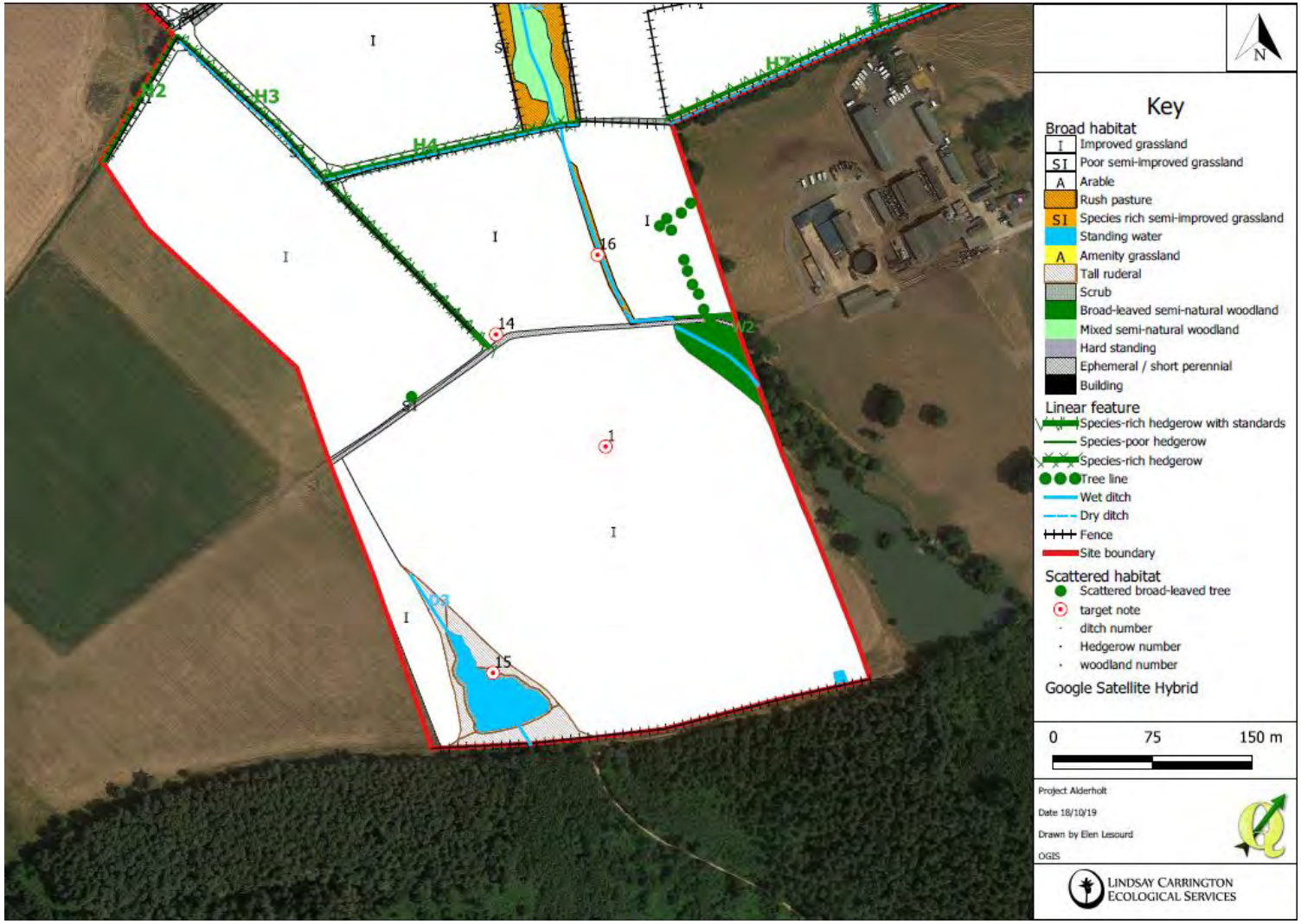
APPENDIX II: Phase 1 habitat map - centre of the site



APPENDIX III: Phase 1 habitat map - eastern area of the site

APPENDIX IV: Phase 1 habitat map – north-western area of the site

APPENDIX V: Phase 1 habitat map south-western area of the site



Target notes to accompany Phase 1 habitat maps

Target Note	Description
1	Improved grassland comprising creeping bent (*Agrostis stolonifera*) (LO), meadow foxtail (*Alopecurus pratensis*) (A), cock's- foot (*Dactilys glomerata*) (LO), red fescue (*Festuca rubra*) (F), Yorkshire-fog (*Holcus lanatus*) (F), hard rush (*Juncus inflexus*) (LO), perennial rye-grass (*Lolium perenne*) ((D), annual meadow-grass (*Poa annua*) (F), rough meadow-grass (*Poa trivialis*) (LF), daisy (*Bellis perennis*) (O), shepherd's-purse (*Capsella bursa-pastoris*) (LO), wavy bitter-cress (*Cardamine flexuosa*) (O), cuckooflower (*Cardamine pratensis*) (LO), common mouse-ear (*Cerastium fontanum*) (O), sticky mouse-ear (*Cerastium glomerate*) (O), creeping thistle (*Cirsium arvense*) (LO), cut-leaved crane's-bill (*Geranium dissectum*) (O), dove's-foot crane's-bill (*Geranium molle*) (R), hogweed (*Heracleum sphondylium*) (R), red-dead nettle (*Lamium pupureum*) (LO), greater plantain (*Plantago major*) (LO), meadow buttercup (*Ranunculus acris*) (O), creeping buttercup (*Ranunculus repens*) (LF), broad-leaved dock (*Rumex obtusifolius*) (O), dandelion (*Taraxacum* agg.)(LO), common field speedwell (*Veronica persica*) (LO), thyme-leaved speedwell (*Veronica serpyllifolia*) (LR).
2	Species-poor, semi-improved grassland comprising creeping bent (LF), meadow foxtail (A), cock's foot (LA), red fescue (F), Yorkshire-fog (F), perennial rye-grass (A), rough meadow-grass (O), three-cornered leek (*Alium triquetrum*) (LF), wavy bitter-cress (LO),common mouse-ear (O), creeping thistle (LO), spear thistle (*Cirsium vulgare*) (LO), common fumitory (*Fumaria officinalis*) (LO), cleavers (*Galium aparine*) (LF), cut-leaved crane's-bill (O), dove's-foot crane's-bill (R), Herb-Robert (*Geranium robertianum*) (LF), Spanish bluebell (*Hyacinthoides hispanica*) (LO), white dead-nettle (*Lamium album*) (LO), red dead-nettle (*Lamium pupureum*) (LO), daffodils (*Narcissus* sp.) (LO), lesser celandine (*Ranunculus ficaria*) (LO), creeping buttercup (LF), common sorrel (*Rumex acetosa*) (O), broad-leaved dock (LF), ragwort (*Senecio jacobaea*) (R), groundsel (*Senecio vulgaris*) (LO), smooth sow-thistle (*Sonchus oleraceus*) (LO), greater stitchwort (*Stellaria holostea*) (LO), common comfrey (*Symphytum officinale*) (R), dandelion (O), wood sage (*Teucrium scorodonia*) (LO), Wheat sp. (*Trictium* sp.) (LO), common nettle (*Urtica dioica*) (LF), common field speedwell (*Veronica persica*) (LO), germander speedwell (*Veronica chamaedry*) (LF), Vetch sp. (*Vicia* sp.) (LF).
3	Arable areas comprising occasional groundsel, red dead-nettle, common mouse-ear, common fumitory, common chickweed (*Stellaria media*), annual meadow-grass and spear thistle.
4	Rush pasture areas are dominated by rush species, abundant moss species, locally abundant hard rush and frequent soft rush (*Juncus effusus*), locally abundant Yorkshire-fog (*Holcus lanatus*), locally frequent creeping buttercup, common mouse ear, selfheal (*Prunella vulgaris*), white clover (*Trifolium repens*), cat's ear (*Hypochaeris radicata*), locally occasional broad-leaved dock, common, common sorrel, spear thistle, great willowherb (*Epilobium hirsutum*) and wild angelica (*Angelica sylvestris*).
5	Semi-improved grassland comprising creeping bent (O), false oat-grass (*Arrhenatherum elatius*) (F), soft brome (*Bromus hordeaceus*) (O), sterile brome (*Bromus sterilis*) (LO), cock's- foot (LA), red fescue (O), Yorkshire-fog (A), perennial rye-grass (LO), rough meadow-grass (O), mugwort (*Artemisa vulgaris*)(R), common mouse-ear (O), creeping

Target Note	Description
	thistle (LO), spear thistle (LO), common fumitory (LO), cut-leaved crane's-bill (O), dove's-foot crane's-bill (R), Herb-Robert (O), hogweed (O), perforated St. John's wort (*Hypericum perforatum*) (O), white deadnettle (LO), red dead-nettle (LO), meadow buttercup (*Ranunculus acris*) (O), lesser celandine (LO), creeping buttercup (LF), common sorrel (*Rumex acetosa*) (O), broad-leaved dock (LF), ragwort (R), red campion (*Silene dioica*) (O), smooth sow-thistle (*Sonchus oleraceus*) (LO), greater stitchwort (LO), common chickweed (*Stellaria media*) (O), common comfrey (*Symphytum officinale*) (R), dandelion (O), common nettle (LF), common field speedwell (LO), germander speedwell (LF), vetch sp. (LF).
6	Amenity grassland / parkland comprising cock's-foot (O), red fescue (O), Yorkshire-fog (O), perennial rye-grass (A), field woodrush (*Luzula campestris*) (R), annual meadow-grass (O), moss sp. (LD). Mature scattered oaks (*Quercus robur*), up to ten metres high are also present within the area which are supporting mycorrhiza fungus and moss communities.
7	Tall ruderal comprising false oat-grass (LF), sterile brome (LO), false wood-brome (*Brachypodium sylvaticum*) (LO), cock's-foot (O), tufted hair-grass (*Deschampsia cespitosa*) (LO),Yorkshire fog (O), soft rush (O), perennial rye-grass (LO), rough meadow-grass (LF), bracken (*Pteridium aquilinum*) (LF), white bryony (*Bryonia dioica*) (LA), creeping thistle (LF), spear thistle (LR), foxglove (*Digitalis purpurea*) (R), wild teasel (*Dipsacus fullonum*) (R), broad-leaved willowherb (*Epilobium montanum*) (LF), ash saplings (Fraxinus excelsior) (LO), cleavers (LA), cut-leaved crane's-bill (R), Herb-Robert (LR), wood avens (*Geum urbanum*) (LR), hogweed (LO), honeysuckle (*Lonicera periclymenum*) (LO), hemlock water-dropwort (*Oenanthe crocata*) (LA), blackthorn saplings (Prunus spinosa) (LR), pedunculate oak saplings (LR), common sorrel (O), creeping buttercup (LO), bramble (*Rubus fructicosus* agg.) (O), broad-leaved dock (LF), common ragwort (LR), red campion (LR), hedge mustard (*Sisymbrium officinale*) (LO), prickly sow-thistle (*Sonchus asper*) (LR), hedge woundwort (*Stachys sylvatica*) (LR), wood sage (LF), upright hedge-parsley (*Torilis japonica*) (LR) and common nettle (LD).
8	Areas of scrub habitat have been recorded in small patches throughout the site comprising locally dominant bramble, occasional gorse (*Ulex europeaus*), young oak, willow sp. (*Salix sp*.), bird cherry (*Prunus avium*), rose sp. (*Rosa* sp.), and hawthorn (*Crateagus monogyna*).
9	Three areas of broad-leaved woodland are located on site: W1, W2 and W3. W1 and W2 are partly landscaped, located on wet ground and support some species favouring wet conditions. A wet ditch runs in the middle of W3 which is approximately 20 metres wide and 270 metres long. This woodland is not managed and has a thick understorey with limited ground flora. Species recorded Moss sp. (LD), soft brome (*Bromus hordeaceus*) (LO), scaly male-fern (*Dryopteris affinis*), Yorkshire-fog (F), soft rush (R), perennial ryegrass (A), rough meadow-grass (O), garlic mustard (*Allaria petiolate*) (O), cow parsley (*Anthriscus sylvestris*) (LF), Lords and ladies (*Arum maculatum*) (LF), Herb-Robert (LO), ground ivy (*Glechoma hederacea*) (LO), ivy (*Hedera helix*) (LA), red dead-nettle (O), honeysuckle (LO), green alkanet (*Pentaglottis sempervirens*) (LF), bramble (LF), lesser celandine (LF), creeping buttercup (O), wood dock (*Rumex sanguineus*) (LF), red campion (LF), hedge woundwort (LF), greater stitchwort (O), dandelion (R), common nettle (LO), common dog-violet (*Viola riviniana*) (LO), silver birch (*Betula pendula*) (LF), hazel (*Corylus avellane*), hawthorn (LO), ash (LO), holly

Target Note	Description
	(LO), Scots pine (*Pinus sylvestris*) (R), blackthorn (LO), pedunculate oak (D), eared willow (*Salix aurita*) (LF), goat willow (*Salix caprea*) (LF), willow sp. (*Salix* sp.) (LF), elder (*Sambucus nigra*) (LO), gorse (LO).
10	An area of mixed woodland is located by a wet ditch and rush pasture west of the site. moss sp. (LD),Yorkshire-fog (D), soft rush (O), rough meadow-grass (O), cleavers (LO), ivy (LA), creeping buttercup (O), red currant (*Ribes sanguineum*) (O), bramble (LF), broad-leaved dock (LF), greater stitchwort (O), common nettle (LF), silver birch (O), hawthorn (O), holly (O), Scot's pine (D), grey willow (*Salix cinerea*) (LA).
11, 12 & 13	Four tree lines form the field boundaries and are located on banks and often by a ditch. The trees are mature, sometimes veteran, some partially decaying presenting tear-outs and missing limbs. Most of the trees are mature pedunculate oak (target note 11) with the exception of a tree line located north of the site by a wet ditch, which is composed of willow species (Willow sp.) (target note 12) and tree line composed of mature beech (*Fagus sylvatica*) (target note 13).
14	Scattered trees are present on west of the B-road, these are mostly mature and veteran pedunculate oak tree, some partially decaying presenting tear-outs and missing limbs and rare scot's pine.
15	Six ponds were recorded on site, some hold water permanently and some temporarily.
	P1 was located east of the site, the pond was of an ellipse shape measuring approximately 70 by 25 metres at its widest, deep in most places, vegetation was recorded on the banks which were of gentle slope, with locally abundant bulrush (*Typha latifolia*) and hemlock water-dropwort (*Oenanthe crocata*), no other macrophyte were recorded abundant scrub in form of saplings was recorded by the pond.
	P2 was recorded south of the site, trial pit recently dug measuring three metres by two metres, approximately 0.5 metres deep, gravel substrate and some algal growth was identified on the surface, with some annual meadow grass sparsely recorded on the banks.
	P3 was recorded north of the woodland east of the site. The pond was measuring approximately 30 by 8 metres surrounded by scrub and mature trees it had steep slope, no obvious vegetation was recorded, apart from floating sweet grass (*Glyceria fluitans*), the pond is heavily shaded and covered with leaf litter.
	P4 is a depression which holds water temporarily, measuring at the time of the survey five by seven metres, no vegetation was recorded but abundant leaf litter.
	P5 is a landscaped pond with the parkland, measuring 10 by 7 metres. Species recorded were locally abundant bulrush, locally frequent yellow iris (*Iris pseudacorus*), occasional pendulous sedge (*Carex pendula*), goat willow, soft rush, scaly male fern (*Dryopteris affinis*), bramble and locally abundant bamboo (*Bambusoideae*) on the top of the bank.
	P6 is a large flooded depression within the wet woodland, willow growing in basin, it was measuring approximately 40 by 30 metres with shallow slopes, no vegetation apart from the willow trees, it is heavily shaded.
16	A total of nine wet ditches approximately 0.5 metres in depth and 0.75 metres wide, vegetated with the adjoining field layer vegetation. Most of these ditches were either dry or held a very limited amount of eutrophic water likely hold water for only short periods during wet weather before rapidly drying out again. D2, north west of the site supports greater willowherb (*Epilobium hirsutum*), and rush species (*Juncus* sp.), D3

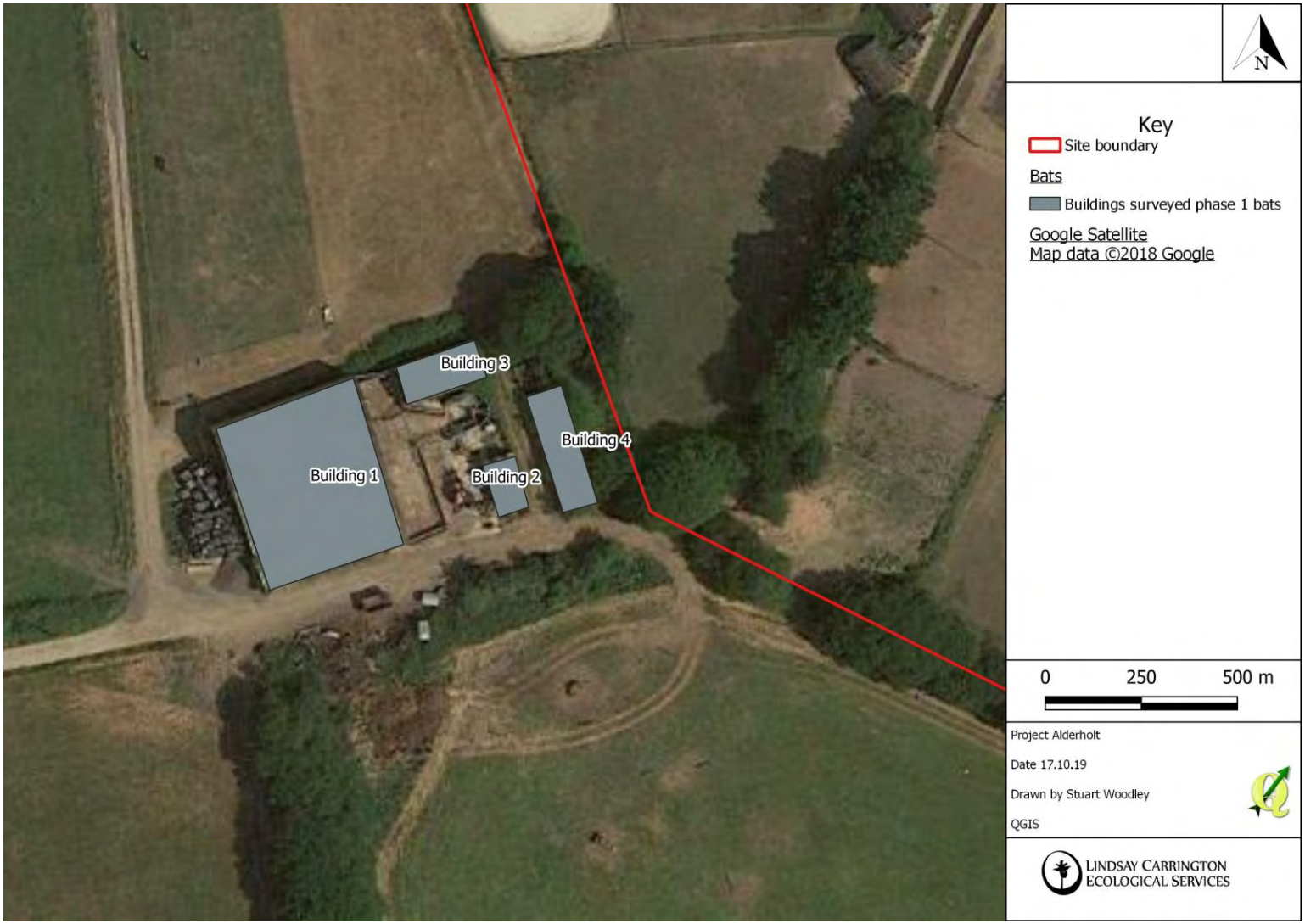
Target Note	Description
	supports hemlock water-dropwort, great willowherb, wild angelica (*Angelica sylvestris*) and rush species, whilst D9 is supporting abundant fool's watercress (*Apium nodiflorum*), floating sweet grass and rare (*Festuca gigantea*).
17	Dry ditches – 10 recorded on site.
18	Native hedgerows
H1	Intact, mature species-rich hedgerow, measuring approximately 1 to 2 metres in height and 2 metres in width. A wet ditch is associated with the hedgerow. Species comprise silver birch, spindle (*Euonymus europeaus*), holly, pedunculate oak, Rose sp. grey willow, elder. *Understorey*: false oat-grass, foxglove, common male fern (*Dryopteris filix-mas*), greater willowherb, cleavers, wood avens, ivy, soft rush, rush sp., honeysuckle and bramble.
H2	Intact mature hedgerow. Measuring approximately 3 metres in height, with oak standard measuring 8 metres in height. Species comprise hawthorn, spindle, holly, blackthorn, pedunculate oak, rose sp. *Understorey:* false oat-grass, cleavers, Yorkshire-fog, bramble, wood dock (*Rumex sanguinea*), wood sage.
H3	Intact mature hedgerow. Measuring approximately 3 metres in height, with oak standard measuring 8 metres in height, on a bank with associated dry ditch. Gaps are present in places but not exceeding 10% of its length. Species comprises hawthorn, spindle, holly blackthorn, pedunculate oak, rose sp., elder and grey willow. *Understorey:* False oat-grass, cleavers, ivy, Yorkshire-fog, bramble, wood dock and wood sage.
H4	Intact mature species-rich, measuring approximately 2.5 metres in height and 1.5 in width, dry ditch associated. Hawthorn, blackthorn, holly, rose sp., grey willow. *Understorey:* wood false brome (*Brachypodium sylvaticum*), cleavers, ivy, Yorkshire-fog, rough meadow-grass, bracken, bramble and common nettle.
H5	Intact mature species-rich, measuring approximately 3 metres in height and 2 in width, with oak standards measuring approximately 8 metres in height. Species comprise silver birch, hawthorn, spindle, holly, pedunculate oak, wild cherry (*Prunus avium*), elder *Understorey:* false oat-grass, cleavers, bramble and honeysuckle.
H6	Intact mature species-rich hedgerow, approximately 2 metres high, and 1.5-metre-wide, wet ditch associated, by a track. Species comprise hawthorn, spindle, holly, pedunculate oak, rose species, grey willow and elder. *Understorey:* cow parsley, false oat grass, common male fern, cleavers, wood avens, hogweed, honeysuckle, bramble and common nettle.
H7	Intact mature species-rich hedgerow measuring approximately 2.5 metres in height and 1.5 metres in width, on a bank with numerous oak standards, including some veteran trees. Species comprise hawthorn, spindle, holly, pedunculate oak, blackthorn, grey willow, elder *Understorey:* Yorkshire fog, cleavers, ivy, wood sage, common nettle, bramble and honeysuckle.
H8	Intact species-rich hedgerow measuring 3.5 metres in height and 2 metres width with associated wet ditch and bank with mature oak, silver birch and willow sp. standard trees, some trees limbs have been cut recently. Species comprise hawthorn, spindle, holly, pedunculate oak, blackthorn, grey willow, elder, silver birch, rosa sp., willow sp. *Understorey:* Yorkshire fog, cleavers, ivy, wood sage, common nettle, bramble and honeysuckle, tufted hair-grass, wood avens, bluebell (*Hyacinthoides non-scripta*), rough meadow-grass, broad-leaved dock, wood sage.
H9	Intact species-rich hedgerow measuring 2 metres in height and 1.5 metres width with associated wet ditch. Comprising hawthorn, Rose sp., elder, pedunculate oak, gorse,

Target Note	Description
	bramble, ivy, broad-leaved dock, hard rush, common nettle.
H10	Species rich hedgerow planted in double row measuring 2 metres in height and 2 metres in width. Hawthorn, holly, cherry laurel (*Prunus laurocerasus*), blackthorn, rose sp., elder. *Understorey:* three-cornered leek, cock's foot, Herb-Robert, cleavers, bramble, red dead-nettle, honeysuckle, hogweed, ivy and common nettle.
H11	Mature species rich hedgerow measuring 2 metres high and 1.5 metres in width, with occasional gaps. Mature oak planted as standards measuring 6 to 8 metres in height, some are veterans. Comprising hawthorn, spindle, blackthorn, pedunculate oak, gorse *Understorey:* Lords and ladies, cleavers, Herb Robert, ground ivy, ivy, honeysuckle, greater stitchwort, upright hedge parsley, bramble, wood sage and common nettle.
H12	Unmanaged native species-poor hedgerow with standard oaks, measuring up to 3 metres in height and 2 metres wide. Standard oak measuring up to 8 metres high. Comprising hazel, hawthorn, pedunculate oak, gorse.Understorey: bracken, bramble, honeysuckle.
H13	Native species-poor hedgerow, with gaps and abundant bramble measuring approximately 1.5-metre-high and 1 metre wide hawthorn, holly, blackthorn, bramble, cleavers and common nettle.
H14	Intact mature species-rich hedgerow measuring 2 metres in height and 1.5 metres in width hawthorn, blackthorn, pedunculate oak, eared willow, elder, Rose sp. *Understorey:* cleavers, broad-leaved dock, bracken and bramble.
H15	Ornamental hedgerow mix of non-native and native species, delimiting adjacent property. Up to 3 metres high and 2 metres wide, not maintained regularly. Comprised beech (*Fagus sylvatica*), Leylandii (*Cypressus* x *leylandii*), silver birch, butterfly bush (*Buddleja davidii*), bamboo (*Bambusoideae*), bramble. *Understorey:* Montbretia (*Crocosmia* x *crocosmiiflora*), variegated periwinkle (*Vinca* sp.) and honeysuckle.
H16	Intact species-rich long-established hedgerow, measuring managed 2 metres in height and 1.5 metres width on a bank with associated dry ditch, the mature oaks and ash have been pollarded to 0.5 metres. Comprises hazel, hawthorn, spindle, ash, blackthorn, pedunculate oak, eared willow, elder, Rose sp. *Understorey:* False oat-grass, cleavers, cock's-foot ivy, red dead nettle and common nettle.
H17	Intact species-rich hedgerow, measuring managed to approximately 2 metres in height and 1.5 metres width on a bank with associated dry ditch. Comprising hawthorn, spindle, ash, blackthorn, pedunculate oak, Rose sp., elder. *Understorey:* garlic mustard (*Alliaria petiolata*), Lords-and-ladies, foxglove, common furmitory, cleavers, Herb-Robert, ground ivy, bluebell, white dead-nettle, lesser celandine, bramble and common nettle.
H18	Intact species-rich hedgerow, with standards measuring managed to approximately to 1.5 metres high, dry ditch east. The standard trees, oak, ash, cherry bird and holly are measuring up to 6 metres high. Comprising hazel, hawthorn, elder, spindle, ash, holly, bird cherry, blackthorn, pedunculate oak, lilac (*Syringa vulgaris*), gorse, bramble *Understorey:* cock's foot, cleavers, ivy, hogweed, daffodils, greater stitchwort, common nettle.
H19	Intact, long-established species-poor hedgerow, measuring approximately 1 metre high maintained, located on a bank by a dry ditch. Comprising hornbeam, hawthorn, blackthorn, gorse, rose sp., elder. *Understorey:* cleavers, ivy, bramble, bracken and common nettle.
H20	Intact, long-established species-rich hedgerow, with one standard oak, measuring approximately 1.5-metre high maintained, located on a bank. Comprising hazel,

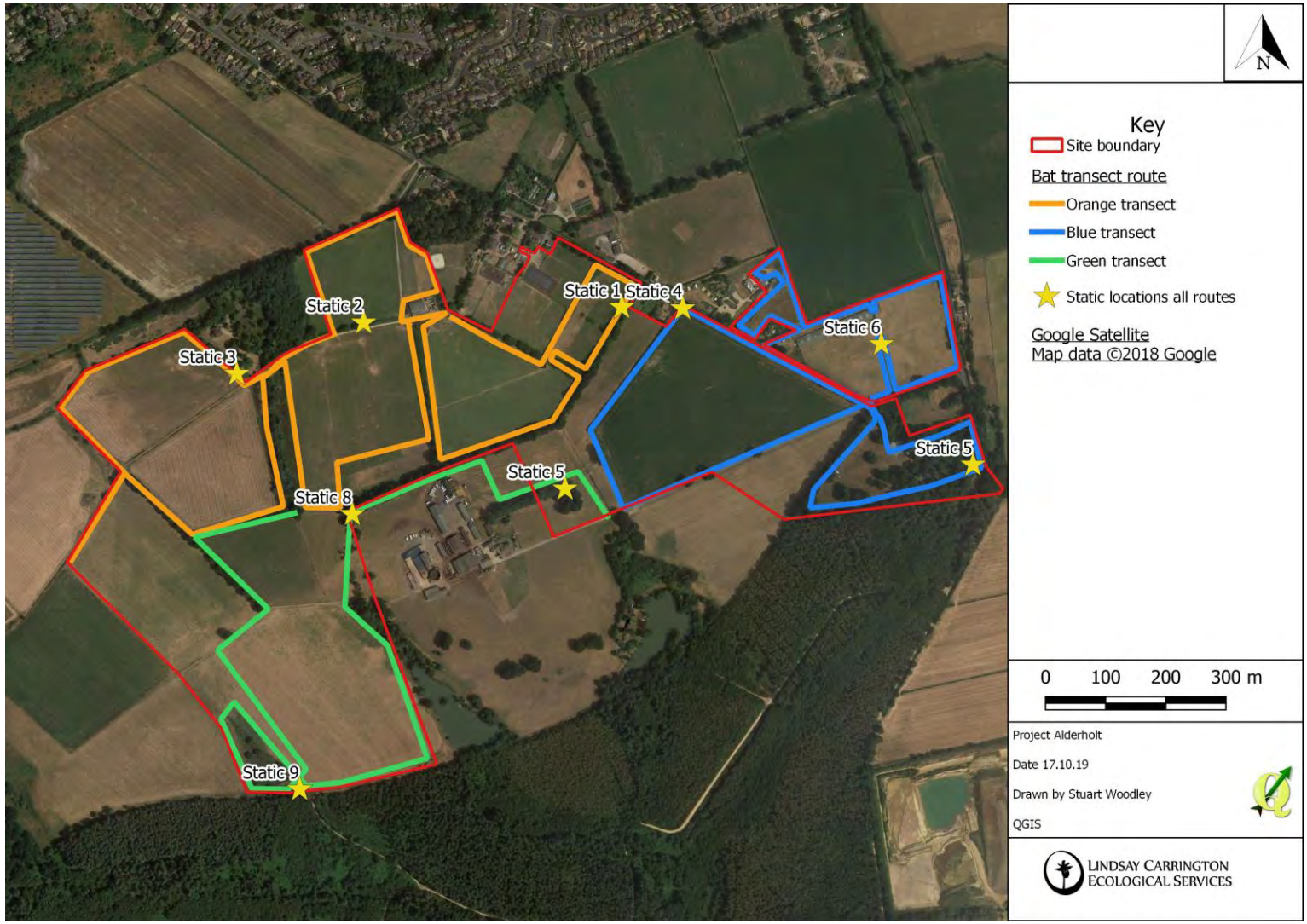
Target Note	Description
	hawthorn, blackthorn, oak, rose sp., elder, gorse. *Understorey:* cleavers, ivy, hogweed, bluebell, upright hedge parsley, bracken, bramble and common nettle.
19	Hardstanding: An unvegetated bitumen track used for access to a farm and caravan park is located within the east of the site. No vegetation was recorded within this habitat
20	Ephemeral/short perennial Farm tracks are located throughout the site are sparsely vegetated by ephemeral vegetation. Species present include creeping bent (F), soft brome (LO), tufted hair-grass (LO), annual meadow-grass (LO), fat-hen (*Chenopodium album*) (LO), common fumitory (R), cut-leaved crane's-bill (R), trailing St John's-wort (R), greater plantain (*Plantago major*) (F), groundsel (LO), common chickweed (LD), white clover (*Trifolium repens*) (O).

APPENDIX VI: Buildings east of the site at Oak Tree Farm surveyed for bats

APPENDIX VII: Buildings north of the site at Sleepbrook Farm surveyed for bats



APPENDIX VII: Transect routes and static monitor locations



APPENDIX VIII: Map showing areas of peak bat activity

APPENDIX IX: Bat Activity Transect Results

Dusk surveys 16th April 2014

Orange transect –16th April 2014

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Orange transect	**SURVEYORS:**	Miguel + Matt	**DATE:**	16/04/19
TEMP AT START:	12 ℃	**SUNSET:**	20:04	**START TIME:**	20:04
TEMP AT END:	10 ℃	**CLOUD COVER (oktas):**	8/8	**END TIME:**	22:04
WIND (bft):	1/12	**RAINFALL:**	none	**WEATHER:**	
Data Analysed Y/N:		**Additional information:**			
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:04 – 09	A				
20:16	B	Soprano pipistrelle	1	Commuting north – south	
20:19	B	Common pipistrelle	1	Heard not seen	
20:19	B	Common pipistrelle	1	Foraging	
20:19	B	Common pipistrelle	1	Heard not seen	
20:28	B-C	Common pipistrelle	1	Heard not seen	
20:30	B-C	Common pipistrelle	1	Heard not seen	
20:33	B-C	Common pipistrelle	2	Commuting south along hedgerow	
20:39	C	Common pipistrelle	2	Foraging above mature trees	
20:45	C-D	Common pipistrelle	2-3	Social calls	
20:49	C-D	Common pipistrelle	1-2	Foraging over hedgerow	
20:49	C-D	Common pipistrelle	1	Commuting south	
20:49	C-D	Common pipistrelle	2-3	Foraging	
20:55	D	Common pipistrelle	3-4	Foraging over lane north – south	
21:05	D-E	Common pipistrelle	1	Heard not seen	
21:08	E	Soprano pipistrelle	1	Heard not seen	
2108	E	Common pipistrelle	2	Heard not seen	
21:13	E-F	Common pipistrelle	1	Heard not seen	
21:19	F	Common pipistrelle +	2	Heard not seen	

		Soprano pipistrelle		
21:19	F	Common pipistrelle + Soprano pipistrelle	2	Foraging
21:27	G	Common pipistrelle	2	Heard not seen
21:29	G-H	Common pipistrelle	3	Social calls
21:32	G-H	Common pipistrelle + Soprano pipistrelle	3	Social calls
21:35	G-H	Common pipistrelle	1	Feeding buzz
21:42	H	Common pipistrelle + Soprano pipistrelle	1	Heard not seen
21:49	H-J	Common pipistrelle + Soprano pipistrelle	2	Foraging up lane
22:00	K	Common pipistrelle	1	Heard not seen
22:00	K	Common pipistrelle + Soprano pipistrelle	2	Heard not seen

Green transect -16th April 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Green transect	**SURVEYORS:**	Joe + Aimee	**DATE:**	16/04/19
TEMP AT START:	12 ℃	**SUNSET:**	20:04	**START TIME:**	20:04
TEMP AT END:	10 ℃	**CLOUD COVER (oktas):**	8/8	**END TIME:**	22:04
WIND (bft):	2/12	**RAINFALL:**	None	**WEATHER:**	Overcast
Data Analysed Y/N:		**Additional information:**	iPad 4 , EMT 2		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:04	A			
20:06	A	Noctule	1	Commuting north – south
20:14	A-B	Noctule	1	Heard not seen
20:17	A-B	Common pipistrelle	1	Heard not seen
20:20	B			
20:21	B	Common pipistrelle	1	Heard not seen
20:23	B	Common pipistrelle	1	Heard not seen
20:23-25	B	Common pipistrelle	1	Commuting/Foraging east – west
20:26	B-C	Common pipistrelle	1	Foraging/Social calls
20:28	B-C	Soprano pipistrelle	1	Heard not seen

20:28	B-C	Common pipistrelle	1	Heard not seen
20:29	B-C	Soprano pipistrelle	1	Heard not seen
20:29	C			
20:30	C	Common pipistrelle	1	Heard not seen
20:31	C	Soprano pipistrelle	1	Heard not seen
20:32	C	Common pipistrelle	1	Foraging/Commuting east – west
20:34	C	Common pipistrelle	2	Heard not seen
20:37	C-D	Soprano pipistrelle	1	Heard not seen
20:39	D			
20:39-41	D	Common pipistrelle	1	Heard not seen
20:41-42	D	Soprano pipistrelle	1	Heard not seen
20:43	D	Common pipistrelle	1	Heard not seen – Social calls
20:45	D-E	Soprano pipistrelle	1	Heard not seen
20:48	D-E	Common pipistrelle	1	Heard not seen
20:50	D-E	Common pipistrelle	1	Heard not seen
20:52	E			
20:52-56	E	Common pipistrelle	1	Heard not seen
20:58	E	Soprano pipistrelle	1	Heard not seen
20:58	E	Common pipistrelle	1	Heard not seen
21:00	E	Soprano pipistrelle	1	Heard not seen
21:04	E-F	Common pipistrelle	1	Heard not seen
21:05	F			
21:05	F	Soprano pipistrelle	1	Heard not seen
21:06-09	F	Common pipistrelle	1	Heard not seen – Social calls
21:08-09	F	Soprano pipistrelle	1	Heard not seen
21:12-13	F-G	Common pipistrelle	1	Heard not seen
21:16	G			
21:17	G	Soprano pipistrelle	1	Heard not seen
21:25	G-H	Soprano pipistrelle	1	Heard not seen
21:25-26	G-H	Common pipistrelle	1	Heard not seen – Social calls
21:27-28	G-H	Common pipistrelle	1	Heard not seen – Social calls
21:30	H			
21:30	H	Common pipistrelle	1	Heard not seen
21:32-34	H	Common pipistrelle	1	Heard not seen
21:32	H	Soprano pipistrelle	1	Heard not seen
21:34	H	Myotis sp.	1	Heard not seen
21:36	H-I	Common pipistrelle	1	Heard not seen – Social calls
21:38	H-I	Common pipistrelle	1	Heard not seen
21:39	H-I	Soprano pipistrelle	1	Heard not seen
21:41	I			
21:41-43	I	Common pipistrelle	1	Heard not seen
21:43-44	I	Soprano pipistrelle	1	Heard not seen
21:46-49	I-A	Common pipistrelle	1	Heard not seen
21:46	I-A	Soprano pipistrelle	1	Heard not seen

21:48	I-A	Noctule	1	Heard not seen
21:50-52	I-A	Common pipistrelle	1	Heard not seen
21:54	A			

Blue transect – 16th April 2014

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Blue transect	**SURVEYORS:**	Sam w + Sarah	**DATE:**	16/04/19
TEMP AT START:	12 ℃	**SUNSET:**	20:04	**START TIME:**	20:04
TEMP AT END:	10 ℃	**CLOUD COVER (oktas):**	8/8	**END TIME:**	22:04
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	
Data Analysed Y/N:		**Additional information:**	iPad 2, EMT 4		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:04-09	A	-	-	-	
20:19-24	B	-	-	-	
20:20	B	Common pipistrelle	1	Heard not seen	
20:31	B-C	Noctule	1	Commuting south – north over small building	
20:32-37	C	-	-	-	
20:35	C	Common pipistrelle	1	Heard not seen	
20:36-37	C	Noctule	1	Heard not seen	
20:44	C-D	Soprano pipistrelle	1	Commuting west – east	
20:45-50	D	-	-	-	
20:45-50	D	Common pipistrelle	1	Foraging over road by D – Intermittent	
20:52	D-E	Common + soprano pipistrelle	2	Foraging along road	
20:55	E	-	-	-	
20:57	E	Common pipistrelle	1	Heard not seen	
21:01	E-F	Common pipistrelle	1	Heard not seen – Foraging near compost heap	
21:10-15	F	-	-	-	
21:18	F-G	Soprano pipistrelle	1	Foraging south – north	

21:22	F-G	Common pipistrelle	1	Heard not seen – Foraging
21:24	G	Soprano pipistrelle	1	Heard not seen – Foraging
21:26	G	-	-	-
21:26	G	Common pipistrelle	1	Heard not seen – Foraging – Continuous
21:32	G	Soprano pipistrelle	1	Heard not seen – Foraging – Continuous
21:35	G-H	Common pipistrelle	1	Heard not seen – Foraging along treeline in caravan field
21:39	G-H	Common pipistrelle	1	Heard not seen – Foraging along road
21:41-46	H	-	-	-
21:41-46	H	Common pipistrelle	1	Heard not seen – Foraging along road
21:50-55	I	-	-	-
21:56	I-J	Common pipistrelle	1-2	Foraging along farm road
21:59-22:04	J	-	-	-

Dusk transects - 30th April 2019

Orange Transect- 30th April 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Orange transect	**SURVEYORS:**	Sam Williams & Helen Lowe	**DATE:**	30/04/19
TEMP AT START:	11 °C	**SUNSET:**	20:26	**START TIME:**	20:25
TEMP AT END:	9 °C	**CLOUD COVER (oktas):**	4/8	**END TIME:**	22:25
WIND (bft):	1	**RAINFALL:**	none	**WEATHER:**	
Data Analysed Y/N:	Yes	**Additional information:**			
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:25 -20:30	A	-	-	-	
20:39-20:44	B	-	-	-	
20:44	B-C	Noctule	1	Heard not seen	

20:46	B-C	Noctule	1	Heard not seen
20:48	B-C	Noctule	1	Heard not seen
20:49		Common pipistrelle	1	Travelling east from gate (commuting) travels east
20:49	B-C	Soprano pipistrelle	1	Heard not seen
20:52	B-C	Soprano Pipistrelle	1	Foraging in corner of field east corner near B.
20:52	B-C	Common pipistrelle	1	Foraging in corner of field east corner near B.
20:56	C	Serotine	1	Commuting east along treeline away from C
20:57	C	Common pipistrelle	1	Foraging
20:59	C	Soprano pipistrelle	1	Foraging
21:01-21:06	C	Common pipistrelle	1	Foraging along southern treeline near C
21:04	C	Soprano pipistrelle	1	Heard not seen
21:05	C	Noctule	1	Heard not seen
21:07	C	Soprano pipistrelle	1	Commuting south along treeline towards C
21:12	C	Common pipistrelle	1	Foraging over farm buildings towards A
21:15-21:20	D	Common pipistrelle	1	Heard not seen
21:26 -21:31	E	Common pipistrelle	1	Heard not seen
21:31	E	Soprano pipistrelle	1	Heard not seen
21:33	E	Noctule	1	Heard not seen
21:35	E	Noctule	1	Heard not seen
21:40	E	Common pipistrelle	1	Track between E and H. Heard not seen
2:47-21:52	F	-	-	-
21:53	F	Soprano pipistrelle	1	Foraging. Heard not seen
21:54-21:59	G	-	-	-
22:06 -22:09	H	Common pipistrelle	1	Heard not seen
22:10	H-I	Common pipistrelle	1	Heard not seen
22:11	H-I	Common pipistrelle	1	Heard not seen
22:13-22:16	I	-	-	-
22:18	I-K	Common pipistrelle	1	Heard not seen
22:19 – 22:24	K	-	-	-
22:23	K	Noctule	1	Heard not seen

Green transect- 30th April 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Green transect	**SURVEYORS:**	Aimee Cokayne & Joe Marcroft	**DATE:**	30/04/19
TEMP AT START:	12 °C	**SUNSET:**	20:27	**START TIME:**	20:27
TEMP AT END:	8 °C	**CLOUD COVER (oktas):**	5/8	**END TIME:**	22:27
WIND (bft):	1	**RAINFALL:**	none	**WEATHER:**	Overcast
Data Analysed Y/N:	Yes	**Additional information:**	EMT 02 iPAD 1		

	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)			
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:27	A	-	-	-
20:32	A-B	Noctule	1	Heard not seen
20:40	A-B	Common pipistrelle	1	Heard not seen
20:44	A-B	Noctule	1	Heard not seen
20:46	B	-	-	-
20:46	B	Noctule	1	Heard not seen
20:46	B	Noctule	1	Commute north to south
20:47	B	Common pipistrelle	1	Commute north to south
20:48	B	Common pipistrelle	1	Foraging on hedgerow
20:49	B	Common pipistrelle	1	Foraging on hedgerow
20:49	B	Soprano	1	Heard not seen
20:50	B	Common pipistrelle	1	Heard not seen
20:51	B-C	Common pipistrelle	1	Heard not seen
20:52	B-C	Common pipistrelle	1	Heard not seen
20:53	B-C	Common pipistrelle	1	Heard not seen
20:54	B-C	Common pipistrelle	1	Heard not seen
20:55	C	Common pipistrelle	1	Foraging on hedgerow
20:56	C	Common pipistrelle	3	Social call – flying around trees
20:58	C	Common pipistrelle	1	Heard not seen
20:59	C	Soprano pipistrelle	1	Heard not seen
21:00	C	Common pipistrelle	1	Heard not seen

21:04	D	-	-	-
21:04	D	Common pipistrelle	1	Heard not seen
21:04	D	Soprano pipistrelle	1	Heard not seen
21:05	D	Soprano pipistrelle	1	Heard not seen
21:05	D	Noctule	1	Heard not seen
21:05	D	Common pipistrelle	1	Heard not seen
21:06	D	Common pipistrelle	1	Heard not seen
21:07	D	Common pipistrelle	1	Heard not seen
21:08	D	Common pipistrelle	1	Heard not seen
21:08	D	Soprano pipistrelle	1	Heard not seen
21:10	D-E	Soprano pipistrelle	1	Heard not seen
21:11	D-E	Myotis spp.	1	Heard not seen
21:11	D-E	Common pipistrelle	1	Heard not seen
21:21	E	-	-	-
21:22	E	Noctule	1	Heard not seen
21:22	E	Soprano pipistrelle	1	Heard not seen
21:24-21:25	E	Soprano pipistrelle	1	Heard not seen
21:25-21:26	E	Common pipistrelle	1	Heard not seen
21:31	F	-	-	-
21:31 – 21:32	F	Common pipistrelle	1	Heard not seen
21:33	F	Common pipistrelle	1	Heard not seen
21:33	F	Noctule	1	Heard not seen
21:33	F	Soprano pipistrelle	1	Heard not seen
21:34	F	Common pipistrelle	1	Heard not seen
21:34	F	Soprano pipistrelle	1	Heard not seen
21:34	F	Noctule	1	Heard not seen
21:35	F-G	Common pipistrelle	1	Heard not seen -social calls
21:35	F-G	Soprano pipistrelle	1	Heard not seen
21:35	F-G	Noctule	1	Heard not seen
21:41	G	-	-	-
21:53	G-H	Soprano pipistrelle	1	Heard not seen
21:54	H	-	-	-
21:56	H	Common pipistrelle	1	Heard not seen
22:04	I	-	-	-
22:04	I	Common pipistrelle	1	Heard not seen
22:11	I-A	Common pipistrelle	1	Heard not seen
22:18	A	-	-	-
22:18	A	Common pipistrelle	1	Heard not seen
22:21	A	Common pipistrelle	1	Heard not seen
22:24	A	Noctule	1	Heard not seen

Blue transect- 30th April 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Blue transect	**SURVEYORS:**	Sarah & Lisa	**DATE:**	30/04/19
TEMP AT START:	12 °C	**SUNSET:**	20:26	**START TIME:**	20:26
TEMP AT END:	8 °C	**CLOUD COVER (oktas):**	4/8	**END TIME:**	22:26
WIND (bft):	1	**RAINFALL:**	none	**WEATHER:**	dry
Data Analysed Y/N:	Yes	**Additional information:**	EMT 04 iPAD 4		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:26	A	-	-	-
20:42-20:57	B	-	-	-
21:00	C	-	-	-
21:01	C	Common pipistrelle	1	Heard not seen
21:01	C	Noctule	1	Heard not seen
21:04-21:07	C	Noctule	1	Heard not seen
21:10	C-D	Soprano pipistrelle	1	Heard not seen
21:16	D	Common pipistrelle	1	Heard not seen
21:17	D	Noctule	1	Heard not seen
21:20	D	Serotine	1	Heard not seen
21:20	D	Common pipistrelle	1	Heard not seen
21:22	D	Serotine	1	Heard not seen
21:23	D	Serotine	1	Heard not seen
21:24	D	Serotine	1	Heard not seen
21:25	D	Common pipistrelle	1	Heard not seen
21:30	D-E	Common pipistrelle	1	Heard not seen – at gate to campsite
21:32	E	Soprano	1	Heard not seen
21:35	E	Serotine	1	Heard not seen
21:37	E	Soprano	1	Heard not seen
21:40	E	Common pipistrelle	1	Heard not seen
21:40	E	Noctule	1	Heard not seen
21:41	E	Common pipistrelle	1	Heard not seen
21:43	E-F	Common pipistrelle	1	Heard not seen
21:44	E-F	Common pipistrelle	1	Heard not seen near water on walk

				from E-F
21:45-21:47	F	Soprano	1	Heard not seen
21:47-21:48	F	Common pipistrelle	1	Heard not seen
21:49	F	Soprano	1	Heard not seen
21:50	F	Common pipistrelle	1	Heard not seen
21:52	F	Soprano	1	Heard not seen
21:57	F-G	Common pipistrelle	1	Heard not seen – near caravans
21:58	G	Common pipistrelle	1	Heard not seen
22:01	G	Common pipistrelle	1	Heard not seen
22:03	G	Common pipistrelle	1	Heard not seen
22:03	G	Serotine	1	Heard not seen
22:03	G	Common pipistrelle	1	Heard not seen
22:04	G	Noctule	1	Heard not seen
22:05	G	Common pipistrelle	1	Heard not seen
22:06	G-H	Soprano	1	Heard not seen
22:07	G-H	Serotine	1	Heard not seen
22:08	G-H	Common pipistrelle	1	Heard not seen
22:10	G-H	Common pipistrelle	1	Heard not seen – in field, near road
22:13	H	Common pipistrelle	1	Heard not seen
22:14	H	Soprano	1	Heard not seen
22:20	H	Common pipistrelle	1	Heard not seen
22:21	H	Common pipistrelle	1	Heard not seen
22:26	H	Common pipistrelle	1	Heard not seen

Orange transect -15th May 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Orange transect	**SURVEYORS:**	Sam Williams Heidi Staines	**DATE:**	15/05/2019
TEMP AT START:	15 °C	**SUNSET:**	20:50	**START TIME:**	20:50
TEMP AT END:	10 °C	**CLOUD COVER (oktas):**	3/8	**END TIME:**	22:50
WIND (bft):	2-3/12	**RAINFALL:**	None	**WEATHER:**	Calm. Mild
Data Analysed Y/N:	Yes	**Additional information:**	iPad 4 EMT 5		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:50-55	E	-	-		
21:10	E – F	Noctule	1	Foraging over field	
21:14-19	F	-	-		
21:23-28	G	-	-		
21:38	H	-	-		
21:39	H	Soprano pipistrelle	1	Heard not seen	
21:41	H	Common pipistrelle	1	Foraging over stopping point H	
21:41	H	Myotis species	1	Heard not seen	
21:48-55	I				
21:50	I	Soprano pipistrelle	1	Heard not seen	
21:52	I	Common pipistrelle	1	Heard not seen	
21:53	I	Long-eared species	1	Heard not seen	
22:03-08	K				
22:03	K	Common pipistrelle	1	Heard not seen	
22:06	K	Noctule	1	Heard not seen	
22:08	K	Common pipistrelle	1	Heard not seen	
22:11-16	A				
22:13	A	Common pipistrelle	1	Heard not seen	
22:24-29	B				
22:26	B	Serotine	1	Heard not seen	
22:32	B – C	Noctule	1	Heard not seen	

22:34	B – C	Serotine	1	Heard not seen
22:35-40	C			
22:36	C	Serotine	1	Heard not seen. Foraging
22:36	C	Common pipistrelle	1	Heard not seen
22:45-50	D			

Green transect -15th May 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Green transect	**SURVEYORS:**	Alex Hannam Andrew Heideman	**DATE:**	15/05/2019
TEMP AT START:	15 °C	**SUNSET:**	20:50	**START TIME:**	20:50
TEMP AT END:	10 °C	**CLOUD COVER (oktas):**	3/8	**END TIME:**	22:50
WIND (bft):	2-3/12	**RAINFALL:**	None	**WEATHER:**	Mild. Light breeze
Data Analysed Y/N:	Y	**Additional information:**	Android LEN 9		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:40	A	-	-	
20:54-59	B	-	-	
21:07	C	Common pipistrelle	1	Commuting and foraging up and down hedge
21:11	C	Common pipistrelle	1	Commuting and foraging up and down hedge
21:21	C – D	Noctule	1	Foraging over field and trees
21:23	C – D	Noctule	1	Foraging over field and trees
21:27-32	D	Common pipistrelle	1	Commuting and foraging over wooded area
21:27-32	D	Noctule	1	Commuting and foraging over wooded area
21:36	D – E	Myotis sp. (suspected Daubenton's)	1	Foraging over large pond
21:36	D – E	Soprano pipistrelle	1	Foraging over tree
21:41	D – E	Common pipistrelle	1	Foraging over field near pond

21:43	D – E	Myotis sp. (suspected Daubenton's)	1	Foraging over pond
21:49-22:01	E – F	Soprano pipistrelle	2	Continuous foraging over grass and pond
21:46-22:01	E – F	Myotis sp. (suspected Daubenton's)	2	Continuous foraging over grass and pond
22:11-16	G	Common pipistrelle	1	Continuous foraging over hedge
22:20-25	H	Myotis sp.	1	Heard not seen. Foraging over hedge
22:26	H – I	Common pipistrelle	1	Foraging over hedge
22:30-35	I			

Blue transect – 15th May 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Blue transect	**SURVEYORS:**	Stuart Woodley Colin Sutch	**DATE:**	15/05/2019
TEMP AT START:	15 °C	**SUNSET:**	20:50	**START TIME:**	20:50
TEMP AT END:	10 °C	**CLOUD COVER (oktas):**	3/8	**END TIME:**	22:50
WIND (bft):	3/12	**RAINFALL:**	None	**WEATHER:**	Cool. Dry
Data Analysed Y/N:	Y	**Additional information:**	iPad 3 EMT 6		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:50	A	-	-		
21:12	B				
21:14	B	Noctule	1	Commuting north to south	
21:17	B	Noctule	1	Heard not seen	
21:24	C				
21:27	C	Noctule	1	Commuting north west	
21:29	C	Noctule	1	Heard not seen	
21:30	C	Noctule	1	Commuting west to north	

21:38	D			
21:38	D	Soprano pipistrelle	1	Heard not seen
21:39	D	Serotine	1	Commuting west to east, and foraging around stopping point D
21:42	D	Soprano pipistrelle	1	Heard not seen
21:42	D	Noctule	1	Heard not seen
21:43	D	Common pipistrelle	1	Heard not seen
21:44-46	D	Serotine	1	Heard not seen
21:46	D	Soprano pipistrelle	1	Heard not seen. Faint, brief call
21:48	D – E	Common pipistrelle	1	Heard not seen
21:49	D – E	Serotine	1	Heard not seen
21:52	E	Noctule	1	Heard not seen
21:53-56	E	Serotine	1	Heard not seen
21:58	E – F	Noctule	1	Heard not seen
22:00	F	Common pipistrelle	1	Heard not seen
22:11	F - G	Serotine	1	Heard not seen
22:15	G	Serotine	1	Heard not seen
22:16-21	G	Noctule	1	Heard not seen
22:21	G	Common pipistrelle	1	Heard not seen
22:23	G	Soprano pipistrelle	1	Heard not seen
22:25	G – H	Serotine	1	Heard not seen
22:30	H			
22:38	I			
22:38	I	Soprano pipistrelle	1	Heard not seen
22:39	I	Common pipistrelle	1	Heard not seen
22:41	I	Serotine	1	Heard not seen
22:48	J			
22:49	J	Serotine	1	Heard not seen
22:50	J	Soprano pipistrelle	1	Heard not seen

Orange transect - 30th May 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Orange transect	**SURVEYORS:**	Sam W + Sam F	**DATE:**	30/05/19
TEMP AT START:	17 ℃	**SUNSET:**	21:09	**START TIME:**	21:09
TEMP AT END:	14 ℃	**CLOUD COVER (oktas):**	1/8	**END TIME:**	23:09
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Clear, calm
Data Analysed Y/N:		**Additional information:**	iPad 6		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:09-14	A	-	-		
21:22-27	B	-	-		
21:32	B-C	Soprano pipistrelle	1	Commuting east to west – south of stopping point B	
21:32	B-C	Common pipistrelle	1	Heard not seen – Commuting	
21:36	B-C	Noctule	1	Heard not seen – Commuting	
21:39-44	C	-	-		
21:39	C	Common pipistrelle	1	Foraging in corner of field over stopping point C, around large oak trees	
21:49	C-D	Common pipistrelle	1	Foraging over farm buildings to north of stopping point A	
21:54-59	D	-	-		
21:54	D	Common pipistrelle	1	Heard not seen	
22:01	D-E	Common pipistrelle	1	Foraging along hedgerow to west of stopping point D	
22:03	D-E	Common pipistrelle	1	Heard not seen	
22:05-10	E	-	-		
22:06-10	E	Common pipistrelle	1	Heard not seen – Foraging intermittently	
22:18-23	F	-	-		
22:19	F	Common pipistrelle	1	Heard not seen	
22:25-30	G	-	-		
22:28	G	Common pipistrelle	1	Foraging along hedgerow	

22:39-44	H	-	-	
22:40	H	Common pipistrelle	1	Heard not seen
22:47-52	I	-	-	
22:48	I	Common pipistrelle	1	Heard not seen
22:59-23:04	K	-	-	
23:00	K	Common pipistrelle	1	Heard not seen – Brief call

Green transect - 30th May 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Green transect	**SURVEYORS:**	Sarah + Andy	**DATE:**	30/05/19
TEMP AT START:	15 ℃	**SUNSET:**	21:09	**START TIME:**	21:09
TEMP AT END:	14 ℃	**CLOUD COVER (oktas):**	2/8	**END TIME:**	23:09
WIND (bft):	1/8	**RAINFALL:**	None	**WEATHER:**	Mild, dry
Data Analysed Y/N:	Yes	**Additional information:**	iPad 3 EMT 2		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:10	A	-	-		
21:25	B	-	-		
21:33	B-C	Common pipistrelle	1	Foraging along tree line	
21:36	C	-	-		
21:44	D	-	-		
21:44-45	D	Soprano pipistrelle	1	Heard not seen	
21:50	D	Common pipistrelle	1	Heard not seen	
21:52	D-E	Common pipistrelle	1	Heard not seen	
21:53	D-E	Soprano pipistrelle	1	Heard not seen	
21:55	D-E	Myotis sp. (Suspected Daubenton's)	2	Heard not seen – Foraging over water	
22:07	E	-	-		
22:07	E	Common pipistrelle	1	Heard not seen	
22:08	E	Common pipistrelle	1	Heard not seen	
22:09	E	Common pipistrelle	1	Commuting west to east across field	

22:11	E-F	Common pipistrelle	1	Heard not seen
22:13	E-F	Common pipistrelle	1	Heard not seen
22:14	E-F	Common pipistrelle	1	Heard not seen
22:18	F	-	-	
22:19	F	Soprano pipistrelle	1	Heard not seen
22:20	F	Common pipistrelle	1	Heard not seen
22:22	F	Common pipistrelle	1	Heard not seen
22:23	F	Soprano pipistrelle	2	Foraging around water and trees
22:29	F-G	Common pipistrelle	1	Heard not seen
22:31	G	-	-	
22:33	G	Common pipistrelle	1	Heard not seen
22:39	H	-	-	
22:39	H	Common pipistrelle	1	Heard not seen
22:40	H	Common pipistrelle	1	Heard not seen
22:42	H	Serotine	1	Heard not seen
22:52	I	-	-	
22:52	I	Soprano pipistrelle	1	Heard not seen
23:02	I-A	Common pipistrelle	1	Heard not seen
23:06	A	Common pipistrelle	1	Heard not seen

Blue transect - 30th May 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Blue transect	**SURVEYORS:**	Stuart + Joe	**DATE:**	30/05/19
TEMP AT START:	17 °C	**SUNSET:**	21:09	**START TIME:**	21:09
TEMP AT END:	14 °C	**CLOUD COVER (oktas):**	3/8	**END TIME:**	23:09
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Mild, dry
Data Analysed Y/N:		**Additional information:**	iPad 1 EMT 1		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:09	A	-	-		
21:22	B	-	-		
21:38	C	-	-		
21:41	C	Noctule	1	Flying up and down hedgerow	

21:47	D	Common pipistrelle	1	Foraging north east to south west – Social calls
21:49	D	Common pipistrelle	1	Heard not seen - Foraging
21:50	D	Soprano pipistrelle	1	Heard not seen
21:50	D	Serotine	1	Heard not seen
21:51	D	Noctule	1	Heard not seen
21:51	D	Common pipistrelle	1	Heard not seen
21:52	D	Common pipistrelle	1	Heard not seen – Foraging
21:54-55	D-E	Common pipistrelle	1	Heard not seen
21:54	D-E	Serotine	1	Heard not seen
21:56	D-E	Common pipistrelle	1	Heard not seen
21:58	E	-	-	
21:59-22:04	E	Common pipistrelle	1	Heard not seen – Foraging. Continuous activity
22:03	E	Myotis sp.	1	Heard not seen
22:06	F	-	-	
22:07	F	Common pipistrelle	1	Heard not seen – Brief call
22:13-15	F-G	Common pipistrelle	1	Heard not seen – Foraging
22:14	F-G	Soprano pipistrelle	1	Heard not seen – Foraging
22:18	G	-	-	
22:19-20	G	Common pipistrelle	1	Heard not seen
22:22	G	Common pipistrelle	1	Heard not seen – Foraging
22:24	G-H	Common pipistrelle	1	Heard not seen
22:27	G-H	Common pipistrelle	1	Heard not seen
22:27	G-H	Brown Long-eared	1	Heard not seen
22:32	H	-	-	
22:34	H	Serotine	1	Heard not seen
22:39	I	-	-	
22:39	I	Noctule	1	Heard not seen
22:40	I	Serotine	1	Heard not seen
22:48	J	Brown Long-eared	1	Heard not seen

Orange transect -11th June 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - orange transect	**SURVEYORS:**	Matt, Andy	**DATE:**	11/06/2019
TEMP AT START:	11°C	**SUNSET:**	21:21	**START TIME:**	21:21
TEMP AT END:	11°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23:21
WIND (bft):	2/12	**RAINFALL:**		**WEATHER:**	
Data Analysed Y/N:	Y	**Additional information:**	Ipad 2, BMT 05		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
21:25	A	Common pipistrelle	1	Heard not seen
21:43	B-C	Common pipistrelle	1	Commuting South, foraging along hedgerow
21:44	B-C	Soprano pipistrelle	1	Heard not seen
21:51	C	Common pipistrelle	1	Heard not seen
22:22	H	Common pipistrelle	1	Heard not seen
22:28	H	Noctule	1	Heard not seen
22:35	H-F	Soprano pipistrelle	1	Heard not seen
22:39	H-F	Common pipistrelle	2	Foraging along hedgerow
23:07	E-K	Common pipistrelle	1-2	Foraging along track
23:09	E-K	Soprano Pipistrelle	1	Heard not seen

Green transect -11th June 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Green transect	**SURVEYORS:**	Aimee and Katie	**DATE:**	11/06/2019
TEMP AT START:	11°C	**SUNSET:**		**START TIME:**	21:21
TEMP AT END:	11°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23:21
WIND (bft):	2-3/12	**RAINFALL:**		**WEATHER:**	Overcast, windy
Data Analysed Y/N:	Y	**Additional information:**	Ipad 6 EMT2		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:25	A				
21:34	At static 7 location	Soprano pipistrelle	1	Heard not seen	
21:36	At static 7 location	Common pipistrelle	1	Heard not seen	
21:41	At static 7 location	Common pipistrelle	1	Heard not seen	
21:46	B	Soprano pipistrelle	1	Heard not seen - Foraging	
21:47	B	Common pipistrelle	1	Foraging along hedgerow - social calling	
21:50	B	Common pipistrelle	2	Foraging along tree line to West of stop B	
21:54	C	Common pipistrelle	2	Foraging along tree line between B-C	
22:04	C	Common pipistrelle	1	Heard not seen north west of stop D	
22:05	D				
22:06 - 22:14	D	Common pipistrelle	3	Foraging along tree line at stop D	
22:14	D	Common pipistrelle	1	Foraging above deep hole	
22:20	E				
22:22	E	Soprano pipistrelle	1	Heard not seen	
22:33	F				
22:35	F	Myotis sp.	1	Heard not seen	

22:45	G			
22:56	G	Common pipistrelle	1	Heard not seen
23:00	H			
23:05	H	Soprano pipistrelle	1	Heard not seen
23:07	H	Common pipistrelle	1	Foraging along tree line adjacent to stop H
23:08	H	Soprano pipistrelle	1	Foraging along tree line adjacent to stop H
23:11	I			

Blue transect -11th June 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt- Blue transect	**SURVEYORS:**	Stuart, Heidi	**DATE:**	11/06/2019
TEMP AT START:	11°C	**SUNSET:**	21:21	**START TIME:**	21:21
TEMP AT END:	10°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23:21
WIND (bft):	2/12	**RAINFALL:**		**WEATHER:**	Overcast
Data Analysed Y/N:	Y	**Additional information:**	Ipad 4, EMT01		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:21	A	-			
21:34	B	-			
21:46	C	-			
21:57	D	-			
22:03	D-E	Common pipistrelle	1	Heard not seen	
22:03	D-E	Soprano pipistrelle	1	Heard not seen	
22:04 – 22:06	D-E	Common pipistrelle	1	Heard not seen	
22:08	D-E	Soprano pipistrelle	1	Heard not seen	
22:09 – 22:15	E	Common pipistrelle	1	Feeding/foraging around trees with continuous activity	
22:16 – 22:17	E-F	Common pipistrelle	1	Heard not seen	
22:19	F	-			
22:25	F	Common pipistrelle	1	Heard not seen	
22:30 – 22:31	F-G	Soprano pipistrelle	1	Heard not seen	

22:32 – 22:37	G	Common pipistrelle	1	Heard not seen, continuous activity
22:42 – 22:43	G-H	Common pipistrelle	1	Heard not seen
22:47	G-H	Common pipistrelle	1	Foraging along treeline, flying W-E
22:49	H	-		
22:52	H	Common pipistrelle	1	Heard not seen
22:54 – 22:56	H	Soprano pipistrelle	1	Heard not seen (continuous)
23:00	I	-		
23:06	I-J	Common pipistrelle	1	Heard not seen
23:09	I-J	Common pipistrelle	1	Heard not seen
23:11	I-J	Common pipistrelle	1	Foraging along track and trees. Flying W-E
23:15 – 23:20	J	Common pipistrelle	1	Heard not seen (continuous activity)

Orange transect -25th June 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Orange transect	**SURVEYORS:**	Sarah, Helen Lowe	**DATE:**	25/6/19
TEMP AT START:	19°C	**SUNSET:**	21:25	**START TIME:**	21:10
TEMP AT END:	17°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23:25
WIND (bft):	0	**RAINFALL:**	Nil	**WEATHER:**	Mild, humid
Data Analysed Y/N:	Yes	**Additional information:**	iPad 4, EMT 04		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:18	A				
21:31	B				
21:41	B	Soprano	1	Heard not seen	
21:42	B	Soprano	1	Heard not seen	
21:46	B-C	Noctule	1	Heard not seen	
21:51-21:54	C				
21:52	C	Noctule	1	Flew east and west over field	

21:59-22:02	D			
22:01	D	Common Pipistrelle		Heard not seen
22:03	D-E	Common Pipistrelle	1	Heard not seen
22:09	E			
22:09	E	Common Pipistrelle	1	Heard not seen
22:10	E	Noctule	1	Heard not seen
22:10	E	Common Pipistrelle	1	Heard not seen
22:13	E	Common Pipistrelle	1	Heard not seen
22:27-22:30	F			
22:32	F-G	Common Pipistrelle	1	Heard not seen
22:32	F-G	Myotis spp.	1	Heard not seen
22:34	F-G	Common Pipistrelle	1	Heard not seen
22:35	G			
22:38	G	Noctule	1	Heard not seen
22:41	G-H	Soprano Pipistrelle	1	Heard not seen
22:42	G-H	Soprano Pipistrelle	1	Heard not seen
22:47	G-H	Soprano Pipistrelle	1	Heard not seen
23:09	H-I	Common Pipistrelle	1	Heard not seen
23:13-23:17	I			
23:16	I	Noctule	1	Heard not seen
23:21	H			
23:21	H	Common Pipistrelle	1	Heard not seen

Green transect -25th June 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt,- Green transect	**SURVEYORS:**	Aimee & Oskari	**DATE:**	25/06/2019
TEMP AT START:	19°C	**SUNSET:**	21.25	**START TIME:**	21.25
TEMP AT END:	17°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23.25
WIND (bft):	1/12	**RAINFALL:**	-	**WEATHER:**	8/8, humid, clammy
Data Analysed Y/N:	Yes	**Additional information:**	Ipad 5, EMT6		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21.25	A	-	-	-	
21.33	B	-	-	-	
21.38	B	Noctule	1	Heard not seen	
21.39	B-C	Common pipistrelle	1	Heard not seen	
21.44	B-C	Common pipistrelle	1	Foraging	
21.45	B-C	Common pipistrelle	3	Foraging & feeding	
21.46	B-C	Common pipistrelle	1	Foraging	
21.47	B-C	Common pipistrelle	1	Foraging	
21.49	C	Common pipistrelle	1	Foraging	
21.54	C	Common pipistrelle	2	Foraging	
21.55	C	Common pipistrelle	1	Heard not seen	
21.56	C	Noctule	1	Commuting	
22.00	C-D	Noctule	1	Heard not seen	
22.05	D	-	-	-	
22.06	D	Serotine	1	Commuting	

22.10	D	Soprano pipistrelle	1	Commuting
22.11	D-E	Daubenton's bat	2	Foraging
22.13	D-E	Daubenton's bat	1	Foraging
22.17	D-E	Common pipistrelle	1	Foraging
22.20	D-E	Soprano pipistrelle	1	Foraging
22.22	E	-	-	-
22.22	E	Common pipistrelle	1	Heard not seen
22.23	E	Daubenton's bat	1	Heard not seen
22.26	E	Soprano pipistrelle	1	Heard not seen - foraging
22.29	E	Common pipistrelle	1	Heard not seen - foraging
22.30	E-F	Daubenton's bat	1	Heard not seen
22.30	E-F	Soprano pipistrelle	2	Foraging
22.34	E-F	Common pipistrelle	1	Foraging
22.38	E-F	Common pipistrelle	1	Foraging
22.40	F	-	-	-
22.47	G	-	-	-
22.55	H	-	-	-
22.57	H	Noctule	1	Commuting

Blue transect -25th June 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt, -Blue transect	**SURVEYORS:**	Joe & Jake	**DATE:**	25/06/2019
TEMP AT START:	19°C	**SUNSET:**	21:25	**START TIME:**	21:25
TEMP AT END:	17°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	23:25
WIND (bft):	1/12	**RAINFALL:**	-	**WEATHER:**	Overcast
Data Analysed Y/N:	Yes	**Additional information:**	Ipad3, EMT5		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
21:25	A	-	-	-
21:43	B	-	-	-
21:48	B	Noctule	1	Heard not seen
21:55	C	-	-	-
21:58	C	Soprano pipistrelle	1	Heard not seen – brief social calling
22:03	D	Noctule	1	Heard not seen – social calling
22:04	D	-	-	-
22:04	D	Common pipistrelle	1	Heard not seen
22:06	D	Common pipistrelle	1	Commuting west-east, down road
22.07	D	Soprano pipistrelle	1	Heard not seen
22.08	D	Common pipistrelle	1	Heard not seen - foraging
22.09	D	Soprano pipistrelle	1	Heard not seen - foraging
22.11	D-E	Common pipistrelle	1	Heard not seen - foraging
22.13	D-E	Common pipistrelle	1	Heard not seen
22.13	D-E	Soprano pipistrelle	1	Heard not seen
22.14	E	-	-	-
22.15	E	Soprano pipistrelle	1	Heard not seen
22.15	E	Common pipistrelle	1	Heard not seen
22.17	E	Soprano pipistrelle	1	Heard not seen – social calling
22.18	E	Common pipistrelle	1	Heard not seen
22.18	E	Common pipistrelle	1	Foraging near oak canopy
22:22	E-F	Common pipistrelle	1	Heard not seen
22:28	F	Common pipistrelle	1	Heard not seen
22:29	F	Common pipistrelle	1	Heard not seen

22:31	F-G	Common pipistrelle	1	Foraging
22:36	G	Serotine	1	Heard not seen
22:39	G	Noctule	1	Heard not seen
22:44	G-H	Common pipistrelle	1	Foraging
22:46	G-H	Soprano pipistrelle	1	Heard not seen
22:58	H	Myotis	1	Heard not seen
23:05		Common pipistrelle	1	Heard not seen
23:08		Common pipistrelle	1	Heard not seen
23:11		Common pipistrelle	1	Heard not seen
23:16		Noctule	1	Heard not seen
23:20		Common pipistrelle	1	Heard not seen

Orange transect – Dusk 9th July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Orange transect	**SURVEYORS:**	Sam Williams, Colin Sutch.	**DATE:**	09/07/2019
TEMP AT START:	20°C	**SUNSET:**	21:21	**START TIME:**	21:21
TEMP AT END:	17°C	**CLOUD COVER (oktas):**	3/4	**END TIME:**	23:21
WIND (bft):	1/12	**RAINFALL:**		**WEATHER:**	Mild, calm
Data Analysed Y/N:		**Additional information:**	Ipad 1		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:21-21:24	A	-	-	-	
21:33-21:36	B	-	-	-	
21:39	B-C	Common pipistrelle	1	Heard not seen, commuting.	
21:41	B-C	Common pipistrelle	1	Heard not seen, commuting.	
21:45-21:48	C	-	-	-	
21:46	C	Soprano pipistrelle	1	Heard not seen, commuting.	
21:47	C	Common pipistrelle	1	Foraging above C.	
21:58-22:01	D	-	-	-	
21:58-22:01	D	Common pipistrelle	1	Heard not seen, foraging, continuously.	

22:02	D-E	Common pipistrelle	1	Heard not seen, foraging.
22:05-22:08	E	-	-	-
22:11	E-F	Serotine	1	Heard not seen.
22:17-22:20	F	-	-	-
22:23	G	-	-	-
22:34	G-H	Common pipistrelle	1	Heard not seen, foraging.
22:36-22:41	H	-	-	-
22:36	H	Soprano pipistrelle	1	Heard not seen.
22:37	H	Myotis sp.	1	Heard not seen.
22:40	H	Myotis sp.	1	Heard not seen.
22:47-22:52	I	-	-	-
22:47-22:52	I	Common pipistrelle	1	Heard not seen, foraging, continuously.
23:00-23:05	K	-		
23:00	K	Common pipistrelle	1	Heard not seen.
23:03	K	Common pipistrelle	1	Heard not seen.
23:04	K	Common pipistrelle	1	Heard not seen.
23:05	K	Brown Long-eared	1	Heard not seen.
23:12-23:14	K-A	Common pipistrelle	1	Heard not seen, continuously.

Green transect – Dusk 9th July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt -Green transect	**SURVEYORS:**	Joe M. Pete D, Dan	**DATE:**	09/07/2019
TEMP AT START:	20°C	**SUNSET:**	21:21	**START TIME:**	21:21
TEMP AT END:	17°C	**CLOUD COVER (oktas):**	3/8	**END TIME:**	23:21
WIND (bft):	1/12	**RAINFALL:**	0	**WEATHER:**	Calm, warm
Data Analysed Y/N:		**Additional information:**	Ipad4, EMT 5		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:23	A	-	-	-	
21:41	B	-	-	-	

21:43	B	Common pipistrelle	1	Heard not seen, faint call.
21:47	B-C	Common pipistrelle	1	Heard not seen.
21:48	C	Soprano pipistrelle	1	Heard not seen, foraging.
21:52	C	-	-	-
21:52	C	Common pipistrelle	1	Heard not seen.
21:55- 21:57	D	Common pipistrelle	1	Heard not seen, foraging continuously.
22:06	D	-	-	-
22:08	D	Soprano pipistrelle	1	Heard not seen, foraging behaviour.
22:09	D	Common pipistrelle	1	Heard not seen, foraging.
22:10	D	Noctule	1	Heard not seen.
22:13	D-E	Common pipistrelle	1	Heard not seen.
22:14	D-E	Myotis	2/3	Heard not seen, foraging.
22:19	D-E	Common pipistrelle	1	Heard not seen.
22:20	D-E	Common pipistrelle	1	Heard not seen
22:23	D-E	Common pipistrelle	1	Heard not seen
22:28	E	-	-	-
22:28-22:35	E	Common pipistrelle	1	Heard not seen, foraging continuously.
22:28	E	Soprano pipistrelle	1	Heard not seen, foraging/social call.
22:28	E	Noctule	1	Heard not seen, brief call.
22:29	E	Myotis	1	Heard not seen, brief call.
22:32	E	Myotis	1	Heard not seen, foraging.
22:34	E-F	Soprano pipistrelle	1	Heard not seen.
22:37	F	-	-	-
22:37	F	Soprano pipistrelle	1	Heard not seen.
22:38-22:42	F	Common pipistrelle	1	Heard not seen, foraging continuously.
22:43	F	Soprano pipistrelle	1	Heard not seen.
22:48	G	-	-	
22:50	G	Soprano pipistrelle	1	Heard not seen.
22:55	G-H	Common pipistrelle	2	Heard not seen.
22:58	H	-	-	-
22:58	H		1	Heard not seen.
22:59	H	Common pipistrelle	1	Heard not seen.
23:01	H	Soprano pipistrelle	1	Heard not seen.
23:01	H	Brown Long-eared	1	Heard not seen.
23:07	I	-	-	-
23:07	I	Serotine	1	Heard not seen.
23:08	I	Common pipistrelle	1	Heard not seen.
23:13	I	Common pipistrelle	2	Heard not seen, foraging.
23:14	I-A	Common pipistrelle	1	Heard not seen.
23:16	I-A	Common pipistrelle	1	Heard not seen.

23:17	I-A	Common pipistrelle	1	Heard not seen.

Blue transect – Dusk 9th July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Blue transect	**SURVEYORS:**	Sarah, George	**DATE:**	09/07/2019
TEMP AT START:	20°C	**SUNSET:**	21:21	**START TIME:**	21:21
TEMP AT END:	17°C	**CLOUD COVER (oktas):**	3/8	**END TIME:**	23:21
WIND (bft):	1/12	**RAINFALL:**	0	**WEATHER:**	Mild, dry
Data Analysed Y/N:		**Additional information:**	Ipad 6, EMT 02		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
21:38-21:41	B				
21:48-21:52	C				
21:58-22:02	D				
21:58	D	Common pipistrelle	1	Heard not seen – foraging, intermittent calling	
22:00	D	Soprano pipistrelle	1	Heard not seen - foraging	
22:02	D	Common pipistrelle	1	Commuting west to east along road.	
22:02	D	Soprano pipistrelle	1	Heard not seen – foraging, faint calling	
22:03-22.05	D-E	Common pipistrelle	1	Heard not seen – foraging, intermittent calling	
22:08-22:12	E	-	-	-	
22:08-22:12	E	Common pipistrelle	1	Heard not seen – foraging, frequent calling.	
22:26-22:31	F	-	-	-	
22:25	F	Soprano pipistrelle	1	Heard not seen – foraging	
22:31	F	Myotis		Heard not seen – faint calling	
22:36	F-G	Noctule	1	Heard not seen – very faint calling	
22:36-22:41	G	-	-	-	
22:36	G	Common pipistrelle	1	Heard not seen – foraging, faint calling	
22:47	G-H	Common pipistrelle	1	Heard not seen - foraging	
22:51-22:56	H	-	-	-	

22:52	H	Soprano pipistrelle	1	Heard not seen - foraging
22.52	H	Common pipistrelle	1	Heard not seen - foraging
22:52	H	Serotine	1	Heard not seen - foraging
22:54-22.55	H	Common pipistrelle	1	Heard not seen – foraging, faint calling
22:57	H-I	Common pipistrelle	1	Heard not seen.
23:02-23:07	I	-	-	-
23.07	I	Soprano pipistrelle	1	Foraging
23:08-23.09	I-J	Soprano pipistrelle	1	Foraging - flying around trees.
23:10-23.14	I-J	Common pipistrelle	1	Heard not seen – foraging, consistent calling
23:16-23:21	J	-	-	-
23:17	J	Common pipistrelle	1	Heard not seen - foraging
23:20	J	Soprano pipistrelle	1	Heard not seen - foraging

Orange transect – Dawn 10th July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Orange Transect	**SURVEYORS:**	Sam W + Colin	**DATE:**	10/07/19
TEMP AT START:	14°C	**SUNRISE:**	05:05	**START TIME:**	03:05
TEMP AT END:	14°C	**CLOUD COVER (oktas):**	2/8	**END TIME:**	05:05
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Cool, calm, misty
Data Analysed Y/N:		**Additional information:**	iPad 1		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
03:05-10	A	-	-		
03:06	A	Common pipistrelle	1	Heard not seen	
03:10	A	Common pipistrelle	1	Heard not seen	
03:16-21	B	-	-		
03:25	B-C	Common pipistrelle	1	Heard not seen	
03:30-35	C	-	-		

03:31	C	Common pipistrelle	1	Foraging over stopping point around large oak
03:33	C	Common pipistrelle	1	Foraging over stopping point around large oak
03:35-38	C-D	Common pipistrelle	1	Foraging along treeline
03:43-48	D	-	-	
03:52	D-E	Common pipistrelle	1	Heard not seen
03:53-58	E	-	-	
03:56	E	Soprano pipistrelle	1	Heard not seen – Near stopping point E
03:58	E	Common pipistrelle	1	Heard not seen – Near stopping point E
04:04-09	F	-	-	
04:14-19	G	-	-	
04:24-29	H	-	-	
04:34-39	I	-	-	
04:52-57	K	-	-	

Green transect -Dawn 10th July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Green Transect	**SURVEYORS:**	Joe + Pete	**DATE:**	10/07/19
TEMP AT START:	14°C	**SUNRISE:**	05:05	**START TIME:**	03:05
TEMP AT END:	14°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	05:05
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Mild
Data Analysed Y/N:		**Additional information:**	iPad4 EMT05		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
03:07	I	-	-		
03:07	I	Serotine	1	Heard not seen	
03:09	I	Myotis sp.	1	Heard not seen	
03:17	H	-	-		
03:17-22	H	Common pipistrelle	1	Heard not seen - foraging	
03:18	H	Noctule	1	Heard not seen - foraging	

03:21	H	Noctule	1	Heard not seen - foraging
03:23	H	Soprano pipistrelle	1	Heard not seen - foraging
03:26	H-G	Noctule	1	Heard not seen - foraging
03:29	G	-	-	
03:37	G-F	Pipistrelle sp.	1	Heard not seen
03:40	F	-	-	
03:41	F	Common pipistrelle	1	Heard not seen
03:41	F	Soprano pipistrelle	1	Heard not seen
03:43	F	Common pipistrelle	1	Heard not seen
03:43	F	Noctule	1	Heard not seen
03:44	F	Noctule	1	Heard not seen
03:44	F	Soprano pipistrelle	1	Heard not seen
03:48	F-E	Common pipistrelle	1	Heard not seen
03:49	F-E	Noctule	1	Heard not seen
03:51	E	-	-	
03:52	E	Noctule	1	Heard not seen
03:53	E	Soprano pipistrelle	1	Heard not seen
03:54	E	Common pipistrelle	1	Commuting west to east
03:58	E-D	Noctule	1	Heard not seen
04:00	E-D	Noctule	1	Heard not seen
04:00	E-D	Common pipistrelle	2	Heard not seen - foraging
04:02	E-D	Soprano pipistrelle	1-2	Heard not seen - foraging
04:04	D	-	-	
04:04	D	Soprano pipistrelle	1-2	Heard not seen - foraging
04:05	D	Common pipistrelle	1	Heard not seen - foraging
04:09	D	Common pipistrelle	1	Heard not seen - foraging
04:15	D-C	Common pipistrelle	2	Heard not seen - foraging
04:15	C	-	-	
04:24	C-B	Common pipistrelle	1	Heard not seen
04:27	B	-	-	
04:27	B	Common pipistrelle	2	Heard not seen
04:32	B	Soprano pipistrelle	1	Heard not seen
04:34	B-A	Common pipistrelle	1	Foraging west to east
04:40	A	-	-	

Blue transect - Dawn 10th July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt- Blue Transect	**SURVEYORS:**	Sarah Barker, George Hunt	**DATE:**	10/07/19
TEMP AT START:	14°C	**SUNRISE:**	05:05	**START TIME:**	03:05
TEMP AT END:	14°C	**CLOUD COVER (oktas):**	8/8	**END TIME:**	05:05
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Mild, dry
Data Analysed Y/N:	Yes	**Additional information:**	iPad6 EMT9		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
03:05-10	A	-	-		
03:05	A	Common pipistrelle	1	Heard not seen – foraging, intermittent calling	
03:06	A	Noctule	1	Heard not seen - foraging	
03:09	A	Common pipistrelle	1	Heard not seen – very faint activity/calling	
03:16-03.21	B	-	-		
03:17	B	Brown Long-eared	1	Heard not seen – social calling	
03:27-03.32	C	-	-		
03:28	C	Noctule	1	Heard not seen – foraging, faint calling	
03:35	C-D	Common pipistrelle	1	Seen not heard – Commuting northeast to southwest across field into trees along road	
03:39-44	D	-	-		
03:42-44	D	Common pipistrelle	1	Heard not seen – foraging, intermittent calling	
03:45	D-E	Common pipistrelle	1	Heard not seen - foraging	
03:47	D-E	Common pipistrelle	1	Heard not seen – commuting, frequent calling	
03:49-04.54	E	-	-		
03:52	E	Common pipistrelle	1	Heard not seen – foraging	

03:53	E	Soprano pipistrelle	1	Heard not seen – foraging, strong calling
03:55-03.56	E-F	Common pipistrelle	1	Heard not seen – foraging, intermittent calling
03:57-02	F	-	-	
03:59	F	Common pipistrelle	1	Commuting east to west through a gap in the trees
03:59	F	Soprano pipistrelle	1	Heard not seen - foraging
04:01	F	Common pipistrelle	1	Heard not seen – foraging, intermittent calling
04:03	F	Soprano pipistrelle	1	Heard not seen, very faint calling/activity
04:07-12	G	-	-	
04:08	G	Common pipistrelle	1	Heard not seen – foraging, faint calling
04.08	G	Greater horseshoe bat	1	Heard not seen – foraging
04:10	G	Soprano pipistrelle	1	Heard not seen - foraging
04:10-04.12	G	Common pipistrelle	1	Heard not seen – foraging, intermittent calling
04.13	G-H	Common pipistrelle	1	Heard not seen - foraging
04:18-04.19	G-H	Common pipistrelle	1	Heard not seen - foraging
04:20	G-H	Common pipistrelle	1	Heard not seen – foraging, intermittent calling
04:22-27	H	-	-	
04:22-04.26	H	Common pipistrelle	1	Heard not seen – foraging, frequent calling/activity
04:31-36	I	-	-	
04:47	J	-	-	

Orange transect – Dusk 23rd July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Orange Transect	**SURVEYORS:**	Sam Williams, Izzy	**DATE:**	23/07/2019
TEMP AT START:	27°C	**SUNSET:**	21:07	**START TIME:**	21:07
TEMP AT END:	25°C	**CLOUD COVER (oktas):**	4/8	**END TIME:**	23:08
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Warm, calm
Data Analysed Y/N:	Yes	**Additional information:**	iPad 3 EMT 02		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
21:07-12	A	-	-	-
21:15	A	Common pipistrelle	1	Heard not seen
21:17	A-B	NO ID	1	Commuting east to west across hedgerow
21:21-26	B	-	-	-
21:21	B	Common pipistrelle	1	Heard not seen – Commuting
21:23	B	Common pipistrelle	1	Heard not seen – Commuting
21:25-27	B	Soprano pipistrelle	1	Commuting southwest to northeast into trees
21:33-34	B-C	Noctule	1	Commuting west to east high over field
21:35	B-C	Common pipistrelle	1	Foraging in eastern corner of field
21:36	B-C	Soprano pipistrelle	1	Heard not seen
21:37	B-C	Common pipistrelle	1	Heard not seen
21:38	B-C	Soprano pipistrelle	1	Heard not seen
21:41	B-C	Common pipistrelle	1	Heard not seen – Foraging
21:44-49	C	-	-	-
21:44-46	C	Common pipistrelle	1	Foraging around large oak and along treeline east of stopping point C
21:45	C	Noctule	1	Heard not seen
21:48-49	C	Common pipistrelle	1	Heard not seen
21:48	C	Soprano pipistrelle	1	Heard not seen
21:56	C-D	Common pipistrelle	1	Heard not seen – Foraging
21:56	C-D	Soprano pipistrelle	1	Heard not seen

21:59	D	-	-	-
22:00	D	Brown Long-eared	1	Heard not seen – Commuting
22:02	D	Common pipistrelle	1	Heard not seen
22:08-13	E	-	-	-
22:09	E	Common pipistrelle	1	Heard not seen – Commuting
22:09	E	Serotine	1	Heard not seen
22:14	E	Soprano pipistrelle	1	Heard not seen – Commuting
22:16	E-F	Common pipistrelle	1	Heard not seen
22:16-17	E-F	Soprano pipistrelle	1	Heard not seen
22:18	E-F	Common pipistrelle	1	Heard not seen
22:20	E-F	Serotine	1	Heard not seen
22:20	E-F	Common pipistrelle	1	Heard not seen
22:21	E-F	Soprano pipistrelle	1	Heard not seen
22:23-24	E-F	Common pipistrelle	1	Heard not seen
22:31-36	F	-	-	-
22:37-40	G	-	-	-
22:41	G-H	Soprano pipistrelle	1	Heard not seen
22:50-53	H	-	-	-
22:57-23:00	I	-	-	-
23:01	I-K	Soprano pipistrelle	1	Heard not seen – Commuting
23:05-08	K	-	-	-
23:07	K	Common pipistrelle	1	Heard not seen – Commuting
23:11	K	Common pipistrelle	1	Heard not seen

Green transect – Dusk 23rd July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Green Transect	**SURVEYORS:**	Matt Tennant, Andy Joyce	**DATE:**	23/07/2019
TEMP AT START:	24°C	**SUNSET:**	21:07	**START TIME:**	21:07
TEMP AT END:	23°C	**CLOUD COVER (oktas):**	5/8	**END TIME:**	23:07
WIND (bft):	3/12	**RAINFALL:**	None	**WEATHER:**	Humid, warm
Data Analysed Y/N:	Yes	**Additional information:**			

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
21:10	A	-	-	
21:14	A	Soprano pipistrelle	1	Heard not seen
21:15	A-B	Noctule	1	Heard not seen
21:24	A-B	Soprano pipistrelle	1	Heard not seen
21:26-27	A-B	Common pipistrelle	1	Heard not seen
21:30	B	Soprano pipistrelle	1	Foraging west to east along tree line
21:31-32	B-C	Common pipistrelle	1	Heard not seen
21:34	B-C	Common pipistrelle	1	Foraging overhead by gated entrance to field – Continuous
21:36-39	B-C	Common pipistrelle	1	Heard not seen – Foraging
21:41-44	C	Common pipistrelle	1	Foraging along hedgerow
21:45	C	Soprano pipistrelle	1	Heard not seen
21:51	C-D			Heard not seen
21:53	D	Soprano pipistrelle	1	Heard not seen – Foraging
21:53	D	Myotis sp.	1	Heard not seen – Foraging
22:00	D-E	Soprano pipistrelle	2	Foraging along bank
22:00	D-E	Myotis sp.	2	Foraging along bank – Continuous
22:00	E	Unidentified pip sp.	3	Foraging – Continuous
22:27	E	Serotine	1	Heard not seen
22:39-44	H	Common pipistrelle	1	Heard not seen
22:49-54	I	-	-	

Blue transect - Dusk 23rd July 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt – Blue transect	**SURVEYORS:**	Stuart Woodley, Aimee Cokayne	**DATE:**	23/07/2019
TEMP AT START:	26°C	**SUNSET:**	21:07	**START TIME:**	21:07
TEMP AT END:	23°C	**CLOUD COVER (oktas):**	4/8	**END TIME:**	23:07
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Warm
Data Analysed Y/N:	Yes	**Additional information:**	iPad 4 EMT 01		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
21:07	A	-	-	-
21:17	B	-	-	-
21:29	C	-	-	-
21:37	D	Noctule	1	Heard not seen – Commuting
21:44	D-E	Soprano pipistrelle	1	Heard not seen – Commuting
21:48	E	-	-	-
21:57	E-F	Common pipistrelle	1	Heard not seen
22:01	F	-	-	-
22:01-02	F	Common pipistrelle	1	Heard not seen
22:02	F	Soprano pipistrelle	1	Heard not seen – Foraging
22:07	F-G	Common pipistrelle	1	Heard not seen – Foraging
22:11	G	-	-	-
22:21	G-H	Soprano pipistrelle	1	Heard not seen – Foraging/Feeding Buzz
22:27-29	H	Common pipistrelle	1	Heard not seen – Foraging
22:31	H	Common pipistrelle	1	Heard not seen
22:34-35	H-I	Common pipistrelle	1	Heard not seen – Foraging
22:38	H-I	Soprano pipistrelle	1	Heard not seen
22:44	I	Common pipistrelle	1	Heard not seen
22:52	J	Common pipistrelle	1	Heard not seen
22:55	J	Common pipistrelle	1	Heard not seen

Orange transect -Dusk 6th August 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Orange Transect	**SURVEYORS:**	Colin + Lisa	**DATE:**	06/08/2019
TEMP AT START:	18 °C	**SUNSET:**	20:46	**START TIME:**	20:46
TEMP AT END:	16 °C	**CLOUD COVER (oktas):**	0/8	**END TIME:**	22:46
WIND (bft):	4/12	**RAINFALL:**	None	**WEATHER:**	Cool, dry
Data Analysed Y/N:	Yes	**Additional information:**	iPad 4 EMT06		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:40	A	-	-	-
20:47	A-B	Common pipistrelle	1	Heard not seen
20:55	B	-	-	-
21:08	B-C	Common pipistrelle	1	Heard not seen
21:09	C	Soprano pipistrelle	1	Heard not seen
21:09	C	Common pipistrelle	1	Heard not seen
21:11	C	Common pipistrelle	1	Heard not seen
21:11-12	C	Common pipistrelle	1	Heard not seen
21:12	C	Soprano pipistrelle	1	Foraging overhead
21:14	C-D	Common pipistrelle	1	Heard not seen
21:17	C-D		1	Heard not seen
21:17	C-D	Common pipistrelle	1	Heard not seen
21:29	D	-	-	-
21:30-32	D	Common pipistrelle	1	Heard not seen
21:39	E	-	-	-
21:40	E	Common pipistrelle	1	Heard not seen
21:41	E	Common pipistrelle	1	Heard not seen
21:43	E	Common pipistrelle	1	Heard not seen
21:54	F	-	-	-
21:58	F	Common pipistrelle	1	Heard not seen
22:00	F-G	Common pipistrelle	1	Heard not seen
22:01	F-G	Common pipistrelle	1	Heard not seen
22:05	G	-	-	-
22:13	G-H	Common pipistrelle	3	Foraging up and down southwest treeline
22:16	G-H	Soprano pipistrelle	1	Heard not seen

22:20	H	-	-	-
22:28	I	-	-	-
22:34-35	I-K	Common pipistrelle	1	Foraging up and down track
22:37	K	-	-	-
22:39	K	Common pipistrelle	1	Heard not seen

Green transect -Dusk 6th August 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt Green Transect	**SURVEYORS:**	Joe + Fenja	**DATE:**	06/08/2019
TEMP AT START:	18 °C	**SUNSET:**	20:46	**START TIME:**	20:46
TEMP AT END:	16 °C	**CLOUD COVER (oktas):**	0/8	**END TIME:**	22:46
WIND (bft):	2/12	**RAINFALL:**	None	**WEATHER:**	Clear, calm
Data Analysed Y/N:	Yes	**Additional information:**	iPad 2 EMT01		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:45-50	A	-	-	-
21:02-07	B	-	-	-
21:02-04	B	Common pipistrelle	1	Commuting east to west along treeline – Foraging – Social calls
21:05	B	Soprano pipistrelle	1	Heard not seen
21:07	B	Common pipistrelle	2	Foraging to the east of stopping point B
21:09	B-C	Common pipistrelle	1	Heard not seen – Foraging – Social calls
21:10	B-C	Soprano pipistrelle	1	Heard not seen
21:11-16	C	-	-	-
21:14	C	Common pipistrelle	1	Heard not seen
21:15	C	Soprano pipistrelle	1	Heard not seen
21:21-26	D	-	-	-
21:21	D	Common pipistrelle	1	Heard not seen – Foraging – Social calls
21:29	D-E	Common pipistrelle	1	Heard not seen – Foraging – Social calls
21:35-40	E	-	-	-
21:40	E	Myotis sp.	1	Heard not seen

21:42	E	Myotis sp.	1	Heard not seen
21:48-53	F	-	-	-
21:48	F	Common pipistrelle	1	Heard not seen – Foraging – Continuous
22:04-09	G	-	-	-
22:04-09	G	Common pipistrelle	1	Foraging – Social calls – Continuous
22:08	G	Myotis sp.	1	Heard not seen
22:13-18	H	-	-	-
22:13	H	Soprano pipistrelle	1	Heard not seen – Foraging
22:13	H	Common pipistrelle	1	Heard not seen – Foraging
22:24-29	I	-	-	-
22:37-42	A	-	-	-

Blue transect -Dusk 6th August 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Blue Transect	**SURVEYORS:**	Sarah, George	**DATE:**	06/08/2019
TEMP AT START:	18°C	**SUNSET:**	20:46	**START TIME:**	20:46
TEMP AT END:	16°C	**CLOUD COVER (oktas):**	1/8	**END TIME:**	22:46
WIND (bft):	3/12	**RAINFALL:**	-	**WEATHER:**	Mild, cool
Data Analysed Y/N:	Y	**Additional information:**	iPad5, EMT05		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:46-49	A	-	-	-	
20:57-21:00	B	-	-	-	
21.02	B-C	Soprano pipistrelle	1	Heard not seen – social calling, frequent calls	
21.02	B-C	Common pipistrelle	1	Heard not seen - foraging	
21.04-21.05	B-C	Common pipistrelle	1	Heard not seen – foraging, frequent calling	
21.04-21.05	B-C	Soprano pipistrelle	1	Heard not seen - foraging	
21:05-08	C	-	-	-	
21.06	C	Common pipistrelle	1	Heard not seen - foraging	

21.08	C	Common pipistrelle	1	Heard not seen - foraging
21.09-21.10	C-D	Common pipistrelle	1	Heard not seen – foraging, frequent calling
21.09-21.10	C-D	Soprano pipistrelle	1	Heard not seen - foraging
21.13	C-D	Common pipistrelle	1	Heard not seen – foraging along road
21:14-17	D	-	-	-
21:14-21.15	D	Soprano pipistrelle	1	Foraging – flying north to south along road
21.14-21.15	D	Common pipistrelle	1	Heard not seen - foraging
21:16-17	D	Common pipistrelle	1	Heard not seen – foraging
21.21	D-E	Common pipistrelle	1	Heard not seen – foraging, consistent calling
21:22-25	E	-	-	-
21.22	E	Serotine	1	Social calling, frequent calls
21:22	E	Common pipistrelle	1	Heard not seen - foraging
21:24	E-F	Common pipistrelle	1	Heard not seen
21:26	E-F	Common pipistrelle	1	Heard not seen
21.27	E-F	Soprano pipistrelle	1	Heard not seen - foraging
21.29	E-F	Soprano pipistrelle	1	Social calling
21.29-21.30	E-F	Common pipistrelle	1	Heard not seen – foraging, frequent calling
21.32	E-F	Common pipistrelle	1	Heard not seen - foraging
21.35	E-F	Soprano pipistrelle	1	Heard not seen - foraging
21:35	E-F	Common pipistrelle	1	Heard not seen - foraging
21:36	E-F	Serotine	1	Heard not seen
21:37-40	F	-	-	-
21.37	F	Soprano pipistrelle	1	Heard not seen - foraging
21.38	F	Myotis	1	Heard not seen - foraging
21.38	F	Common pipistrelle	1	Heard not seen – foraging, frequent calling
21.39	F	Soprano pipistrelle	1	Heard not seen - foraging
21.40	F	Myotis	1	Heard not seen - foraging
21:41	F-G	Soprano pipistrelle	1	Heard not seen – foraging, intermittent calling
21:41	F-G	Common pipistrelle	1	Heard not seen – foraging, social calling
21.43	F-G	Common pipistrelle	1	Heard not seen – foraging, social calling
21.44	F-G	Leisler's bat	1	Heard not seen – social calling
21.44	F-G	Common pipistrelle	1	Heard not seen - foraging
21:46-21.49	G	-	-	-
21:46-21.49	G	Common pipistrelle	1	Foraging in trees
21:49	G	Soprano pipistrelle	1	Heard not seen – foraging
21.50	G-H	Common pipistrelle	1	Heard not seen – foraging
21:51-21.52	G-H	Soprano pipistrelle	1	Heard not seen - foraging

21.52-21.53	G-H	Common pipistrelle	1	Heard not seen - foraging
21.54	G-H	Soprano pipistrelle	1	Heard not seen - foraging
21.55	G-H	Common pipistrelle	1	Heard not seen - foraging
21.56-21.57	G-H	Soprano pipistrelle	1	Heard not seen – foraging, consistent calling
21.57-21:58	G-H	Common pipistrelle	1	Heard not seen - foraging
21:59-22:10	H	-	-	-
22.00	H	Serotine	1	Heard not seen - foraging
22.03	H	Serotine	1	Heard not seen - foraging
22:03	H	Common pipistrelle	1	Heard not seen
22:04-22.10	H	Common pipistrelle	1	Foraging overhead, consistent calling
22.05	H	Serotine	1	Heard not seen - foraging
22.11	H-I	Common pipistrelle	1	Foraging overhead
22.11-22.15	H-I	Soprano pipistrelle	1	Heard not seen – foraging, consistent calling
22.13	H-I	Common pipistrelle	1	Heard not seen - foraging
22:15-22.19	I	-	-	-
22.15-22.19	I	Soprano pipistrelle	1	Foraging overhead – consistent calling
22:15	I	Common pipistrelle	1	Heard not seen
22:17	I	Common pipistrelle	1	Heard not seen - foraging
22.19	I	Common pipistrelle	1	Heard not seen - foraging
22:21	I-J	Common pipistrelle	1	Heard not seen - foraging
22:23	I-J	Common pipistrelle	1	Heard not seen - foraging
22:25	I-J	Common pipistrelle	1	Heard not seen- foraging
22:28-38	J	-	-	-
22:39-22.46	J-A	Common pipistrelle	1	Heard not seen – foraging along road, consistent calling

Orange transect – Dusk 20th August 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt Orange Transect	**SURVEYORS:**	Helen + Nikkii	**DATE:**	20/08/2019
TEMP AT START:	18°C	**SUNSET:**	20:19	**START TIME:**	20:19
TEMP AT END:	15°C	**CLOUD COVER (oktas):**	2/8	**END TIME:**	22:19
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Calm, dry, clear
Data Analysed Y/N:	Y	**Additional information:**	iPad 2 EMT 2		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:27	A	Common pipistrelle	1	Commuting along hedgerow north-west to north-east.	
20:30	A	Soprano pipistrelle	1	Heard not seen.	
20:33	A-B	Soprano pipistrelle	1	Foraging above the corner between A and B. Brief pass.	
20:35	A-B	Common pipistrelle	1	Heard not seen between A and B.	
20:41-42	B	Common pipistrelle	1	Heard not seen.	
20:45	B	Common pipistrelle	1	Heard not seen.	
20:51	B	Serotine	1	Heard not seen.	
20:53	B	Serotine	1	Flew north-west to south-east.	
21:02	B-C	Common pipistrelle	1	Heard not seen.	
21:03-05	C	Serotine	2	Foraging overhead at point C.	
21:05	C	Common pipistrelle	1	Heard not seen.	
21:08	C-D	Serotine	1	Commuting south-north along treeline to C.	
21:12	C-D	Common pipistrelle	1	Heard not seen.	
21:17	D	Common pipistrelle	1	Heard not seen.	
21:18	D	Common pipistrelle	1	Heard not seen.	
21:23-24	E	Soprano pipistrelle	1	Heard not seen.	
21:27	E	Common pipistrelle	1	Heard not seen.	
21:42	E	Noctule	1	Heard not seen.	
21:48	H	Common pipistrelle	1	Foraging around point H. Heard not seen.	
21:56-57	H	Common pipistrelle	1	Heard not seen.	

21:59	H	Serotine	1	Heard not seen.
22:02	H	Common pipistrelle	1	Heard not seen.
22:05	H-F	Soprano pipistrelle	1	Heard not seen.
22:13	G-H	Soprano pipistrelle	1	Heard not seen.
22:17	G-H	Daubentons	1	Heard not seen.
22:21	G-H	Common pipistrelle	1	Heard not seen.
22.29	F-A back along track	Common pipistrelle	3	Heard not seen.

Green transect – Dusk 20th August 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt Green Transect	**SURVEYORS:**	Joe + Izzy	**DATE:**	20/08/2019
TEMP AT START:	18°C	**SUNSET:**	20:19	**START TIME:**	20:19
TEMP AT END:	15°C	**CLOUD COVER (oktas):**	2/8	**END TIME:**	22:19
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Cool, calm
Data Analysed Y/N:		**Additional information:**	AS1		

	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)			
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
20:26-31	A	-	-	-
20:38	B	Common pipistrelle	2	Foraging continuous
20:46	C	Common pipistrelle	2	Foraging along treeline continuous
20:56	C-D	Common pipistrelle	1	Heard not seen
20:59	C-D	Myotis sp.	2	Foraging continuously on water
21:01	C-D	Common pipistrelle	1	Heard not seen
21:04	C-D	Common pipistrelle	1	Foraging by water at edge of corn field
21:06	C-D	Soprano pipistrelle	1	Heard not seen
21:06	D	-	-	-
21:15	D-E	Serotine	1	Heard not seen
21:18	D-E	-	-	-
21:20	E	Myotis sp.	3	Foraging near pond

21:25	E-F	Soprano pipistrelle	2	Heard not seen
21:30	F	-	-	-

Blue transect – Dusk 20th August 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt Blue Transect	**SURVEYORS:**	Heidi + Sarah	**DATE:**	20/08/2019
TEMP AT START:	18°C	**SUNSET:**	20:19	**START TIME:**	20:19
TEMP AT END:	15°C	**CLOUD COVER (oktas):**	2/8	**END TIME:**	22:19
WIND (bft):	1/12	**RAINFALL:**	None	**WEATHER:**	Calm, dry
Data Analysed Y/N:		**Additional information:**	EMT 09 LEN08		
	(PLEASE ADD TARGET NOTES TO MAP AND APPEND TO RECORDING FORM)				
TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.	
20:23-26	A	-	-	-	
20:45-49	B	-	-	-	
20:57-02	C	-	-	-	
21:04	C-D	Common pipistrelle	1	Heard not seen – Commuting	
21:06	C-D	Common pipistrelle	1	Heard not seen	
21:11-15	D	-	-	-	
21:12	D	Common pipistrelle	1	Heard not seen – Foraging	
21:17	D-E	Serotine	1	Heard not seen	
21:18-21	E	Common pipistrelle	1	Heard not seen	
21:24-27	F	-	-	-	
21:29	F-G	Common pipistrelle	1	Heard not seen – Foraging	
21:29	F-G	Common pipistrelle	1	Heard not seen – Commuting	
21:31	F-G	Common pipistrelle	1	Heard not seen – Commuting	
21:32	F-G	Common pipistrelle	1	Heard not seen – Commuting	
21:32	F-G	Common pipistrelle	1	Heard not seen – Foraging	
21:36-40	G	-	-	-	
21:39	G	Serotine	1	Heard not seen – Foraging overhead	
21:50-58	H	-	-	-	
21:56	H	Soprano pipistrelle	1	Heard not seen	
21:56	H	Serotine	1	Heard not seen – Foraging	

21:57	H	Common pipistrelle	1	Heard not seen – Foraging
21:58	H	Serotine	1	Heard not seen
22:06-10	I	-	-	-
22:18	J	-	-	-
22:19	J	Soprano pipistrelle	1	Heard not seen

Orange transect – Dusk 10th September 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Orange Transect	**SURVEYORS:**	Helen Lowe and Sam Hamilton - Fletcher	**DATE:**	10/09/2019
TEMP AT START:	16 ℃	**SUNSET:**	19:34	**START TIME:**	19:34
TEMP AT END:	14 ℃	**CLOUD COVER (oktas):**	3/8	**END TIME:**	21:34
WIND (bft):	1/12	**RAINFALL:**	0	**WEATHER:**	Mild/Dry
Data Analysed Y/N:	Y	**Additional information:**	I-Pad- 6 EMT-6		
	(PLEASE ADD TRAGET NOTES TO MAP AND APPEND TO RECORDING FORM)				

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc:
19:32- 19:34	A	-	-	-
19:42-19:44	B	-	-	-
19:50	Near static 1	Common pipistrelle	1	Heard not seen
19:51	Near static 1	Common pipistrelle	1	Heard not seen
19:51	Near static 1	Common pipistrelle	1	Commuting south west along the hedgerow
19:51	Near static 1	Common pipistrelle	1	Foraging along hedgerow
19:48 – 19:56	Near static 1	Common pipistrelle	1	Foraging along hedgerow
20:03	B-C	Common pipistrelle	1	Foraging around the corner of field between pint B & C
20:05	B-C	Soprano pipistrelle	1	Commuting east to west along hedgerow
20:07	B-C	Common pipistrelle	1	Foraging in trees and hedgerow
20:09 -20:12	C	Serotine	2	Foraging at point C- over the trees
20:12	C	Common pipistrelle	1	Continuous foraging at point C

20:14	C	Common pipistrelle	1	Heard not seen
20:18	C	Common pipistrelle	1	Heard not seen
20:20-20:21	A-J	Common pipistrelle	1	Foraging east to west along the hedgerow
20:32	J	Common pipistrelle	1	Heard not seen
20:33-20:34	D	Common pipistrelle	1	Heard not seen
20:36	D-E	Common pipistrelle	1	Heard not seen
20:37-20:39	E	Soprano pipistrelle	1	Heard not seen
20:41-20:53	H	Common pipistrelle	1	Heard not seen
20:59	F	Common pipistrelle	1	Heard not seen
21:06	F-G	Common pipistrelle	1	Heard not seen foraging
21:08-21:11	G	Common pipistrelle	1	Heard not seen
21:12	G-I	Common pipistrelle	1	Heard not seen foraging
21:13	G-I	Common pipistrelle	1	Heard not seen
21:22	G-I	Common pipistrelle	1	Heard not seen
21:26	I	Common pipistrelle	1	Heard not seen
21:34	Near A	Common pipistrelle	1	Heard not seen
21:35	Near A	Soprano pipistrelle	1	Heard not seen

Green transect – Dusk 10th September 2019

BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt - Green Transect	**SURVEYORS:**	Pete, Andy J	**DATE:**	10/09/2019
TEMP AT START:	16 ℃	**SUNSET:**	19.34	**START TIME:**	19.34
TEMP AT END:	14 ℃	**CLOUD COVER (oktas):**	3/8	**END TIME:**	21.34
WIND (bft):	1/12	**RAINFALL:**	0	**WEATHER:**	Mild/Dry
Data Analysed Y/N:	Y	**Additional information:**	I-Pad- 5 EMT-5		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc.
19.38-43	A			
19.45	Static 7	Soprano pipistrelle	1	Brief call Heard not seen
19.47	Static 7	Soprano pipistrelle	1	Foraging Heard not seen
19.51-55	Static 7	Common and Soprano pipistrelle	2	Foraging above trees at S7
19.58	A-B T1	Noctule	1	Foraging above trees to north
20.00-06	B			

20.00-06	B	Common and Soprano pipistrelle	2	Constant foraging along tree line at B
20.02	B	Noctule, Common and Soprano pipistrelle	3	Brief pipistrelle calls. Noctule commuting -heard not seen
20.03-07	B	Serotine, Noctule, Common and Soprano pipistrelle	4	Constant foraging -heard not seen
20.07-10	B-C	Common and Soprano pipistrelle	2	Constant foraging -heard not seen
20.10-21	C			
20.10-20.21	C	Serotine, Common and Soprano pipistrelle	3	Constant foraging -heard not seen
20.23-24	C-D	Common pipistrelle	1	Foraging -heard not seen
20.25-31	D			
20.25-31	D	Common and Soprano pipistrelle	2	Foraging -heard not seen
20.32	D-E	Common and Soprano pipistrelle	2	Brief call -heard not seen
20.33-37	D-E	Common and Soprano pipistrelle	2	Constant foraging over water (social calls)
20.37-38	D-E	Common pipistrelle	1	Constant foraging over water
20.42-48	E			
20.42	E	Soprano pipistrelle	1	Lots of brief calls -heard not seen
20.43-48	E	Common and Soprano pipistrelle	2	Lots of brief calls -heard not seen
20.48-55	E	Common and Soprano pipistrelle	2	Lots of brief calls -heard not seen
20.55-01	E-F	Common and Soprano pipistrelle	2	Constant foraging around pond
21.02-07	F			
21.02-07	F	Common and Soprano pipistrelle	2	Constant foraging Heard not seen
21.10-15	G			
21.14	G	Serotine	1	Brief call Heard not seen
21.15	G	Common pipistrelle	1	Brief call Heard not seen
21.17	G-H	Common pipistrelle	1	Brief calls. Heard not seen
21.17-22	G-H	Common pipistrelle	1	Foraging Heard not seen (Quiet)
21.17	H	Myotis	1	Brief call Heard not seen
21.22-27	H	Common and Soprano pipistrelle	2	Foraging - Heard not seen (Quiet)
21.25	H	Myotis	1	Brief call - Heard not seen
21.29-34	I			
21.29	I	Common pipistrelle	1	Brief call - Heard not seen
21.31	I	Common pipistrelle	1	Brief call - Heard not seen
21.32	I	Serotine	1	Brief call - Heard not seen

21.32	I	Common pipistrelle	1	Commuting - Heard not seen
21.33/34	I	Common pipistrelle	1	Foraging - Heard not seen
21.37	I	Common pipistrelle	1	Brief call - Heard not seen

Blue transect – Dusk 10th September 2019

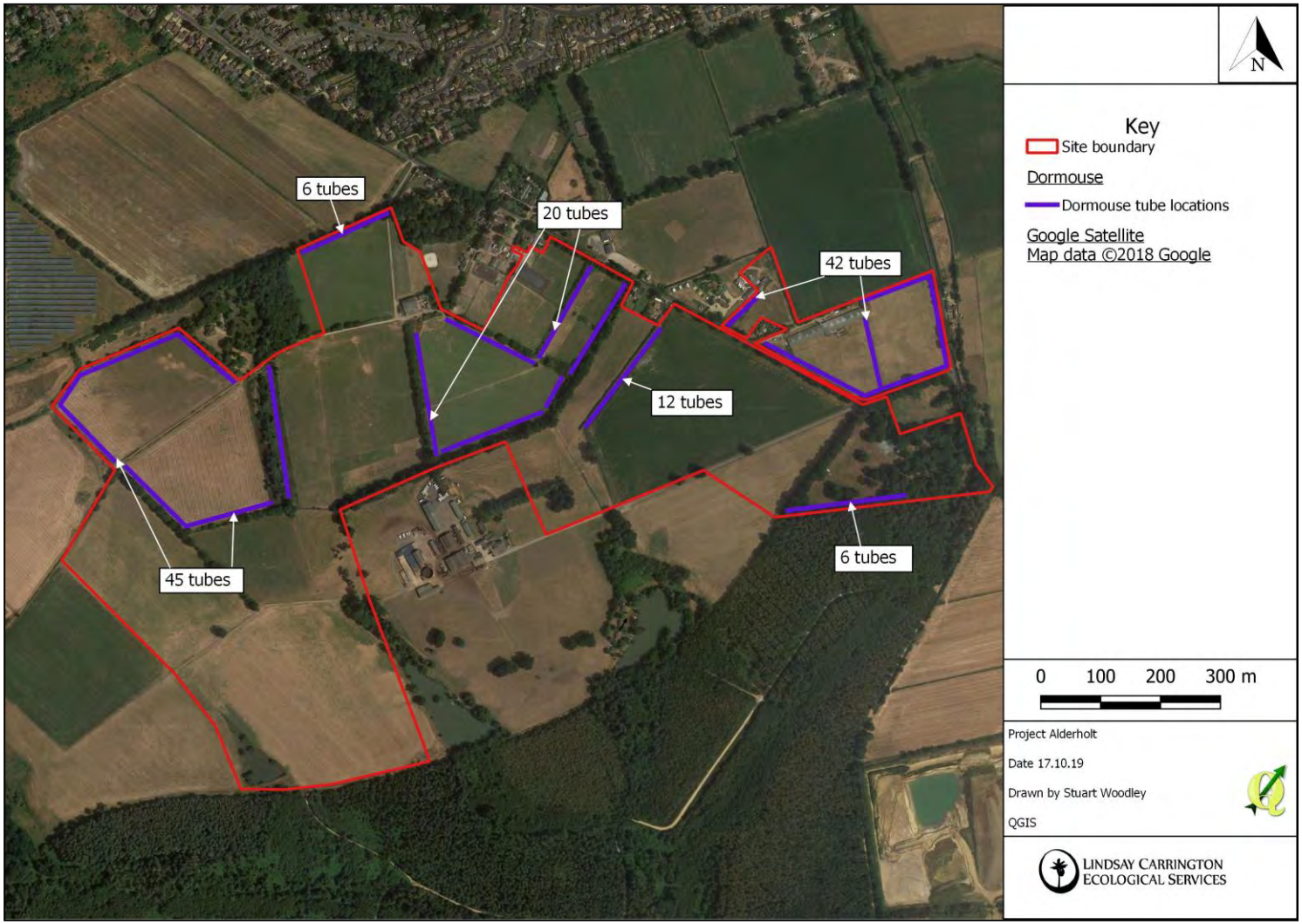
BAT DETECTOR ACTIVITY SURVEY					
SURVEY LOCATION:	Alderholt Blue Transect	**SURVEYORS:**	George Hunt and Sarah Barker	**DATE:**	10/09/2019
TEMP AT START:	16 ℃	**SUNSET:**	19:34	**START TIME:**	19:34
TEMP AT END:	14 ℃	**CLOUD COVER (oktas):**	3/8	**END TIME:**	21:34
WIND (bft):	1/12	**RAINFALL:**	0	**WEATHER:**	Mild/Dry
Data Analysed Y/N:	Yes	**Additional information:**	I-Pad- 1 EMT-1		

TIME	STOPPING POINT/TARGET NOTE	SPECIES	NUMBER OF BATS	ACTIVITY (behaviour/ commuting/ direction/ foraging/ feeding/ feeding buzzes/ roost/ etc:
19:34- 19:39	A	-	-	-
19:45-19:49	B	-	-	-
19:56 - 20:00	C	-	-	-
20:06	D	-	-	-
20:07	D	Common pipistrelle	1	Commuting along road west to east
20:08	D	Common pipistrelle	1	Heard not seen
20:09	D	Common pipistrelle	1	Heard not seen
20:10	D	Common pipistrelle	1	Foraging in trees
20:11	D-E	Common pipistrelle	1	Foraging in trees
20:12	D-E	Common pipistrelle	1	Foraging in trees
20:13	D-E	Common pipistrelle	1	Foraging in trees
20:14	D-E	Common pipistrelle	1	Foraging in trees
20:15	D-E	Common pipistrelle	1	Foraging in trees
20:16	D-E	Common pipistrelle	1	Heard not seen commuting
20:16-20:20	D-E	Common pipistrelle	1	Heard not seen commuting
20:18	D-E	Common pipistrelle	1	Foraging
20:19	E	Soprano pipistrelle	1	Heard not seen
20:22	E-F	Common pipistrelle	1	Heard not seen
20:26	E-F	Common pipistrelle	1	Heard not seen

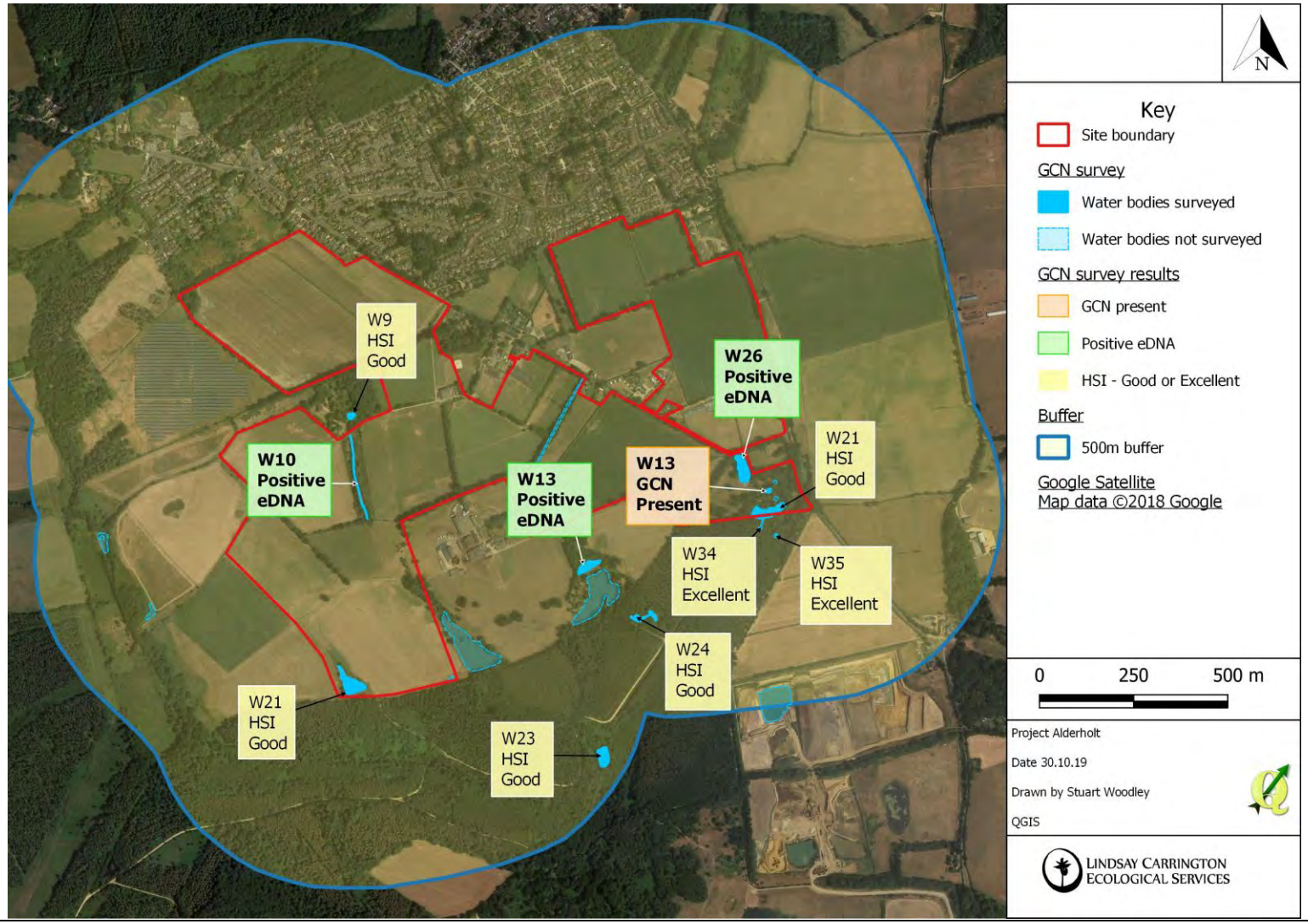
20:31	F	Soprano pipistrelle	1	Heard not seen
20:41	F-G	Soprano pipistrelle	1	Heard not seen
20:46	G	Soprano pipistrelle	1	Heard not seen
21:01- 21:05	H	-	-	-
21:04	H	Soprano pipistrelle	1	Heard not seen
21:10	I	Serotine	1	Heard not seen
21:11	I	Myotis sp.	1	Heard not seen
21:12	I	Barbastelle	1	Heard not seen
21:18	I	Common pipistrelle	1	Heard not seen
21:19	I	Common pipistrelle	1	Heard not seen
21:24	I	Common pipistrelle	1	Heard not seen
21:24	J	Common pipistrelle	1	Heard not seen
21:26	J	Serotine	1	Heard not seen
21:26	J	Brown long eared	1	Heard not seen
21:27	J	Common pipistrelle	1	Heard not seen
21:27	J	Myotis sp.	1	Heard not seen
21:28	J	Common pipistrelle	1	Heard not seen

APPENDIX XII: Map of breeding bird territories

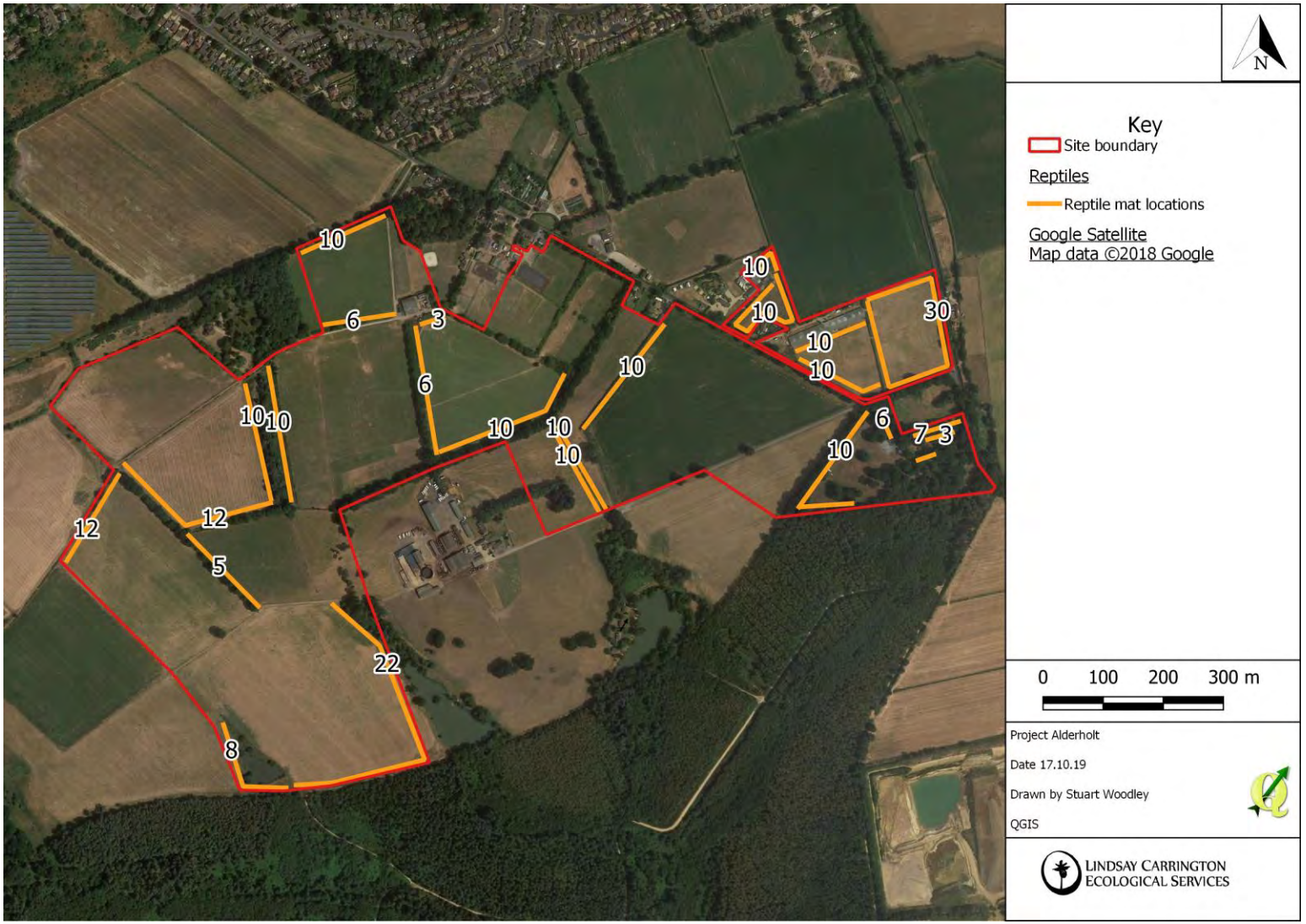
APPENDIX XIII: Dormice tube locations



APPENDIX XIV: Waterbodies surveyed for great crested newts



APPENDIX XIV: Reptile mat locations



APPENDIX XV: Locations where reptiles were recorded