the ecology partnership

Summary of Ecological Works

Land at Imberhorne Farm
East Grinstead

The Ecology Partnership, Thorncroft Manor, Thorncroft Drive, Leatherhead, Surrey KT22 8JB
T +44 (0) 1372 364133 E info@ecologypartnership.com W ecologypartnership.com

Contents

LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snapshot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

1.1 The Ecology Partnership was commissioned by Welbeck Land to undertake a site assessment and preliminary ecological appraisal on land at Imberhorne Farm in 2016. Since the initial assessment, a range of species specific works and updated PEAs have been conducted in 2016, 2017, 2018 and 2019. This report provides a summary of the ecological works conducted over the past 4 years.

1.2 This report comprises the:

- Assessment methodologies (Section 2);
- Desk Top Results (Section 3);
- PEA / Habitats (section 4);
- Bats (section 5);
- Reptiles (section 6);
- Dormice (section 7);
- GCNs (section 8);
- Badgers (section 9);
- Breeding Birds (section 10)
- Review (section 11);
- Recommendations (section 12);
- Conclusions (Section 13).

Site Context and Status

1.3 The site is situated to the west of Imberhorne Lane on the western edge of East Grinstead, West Sussex (TQ3719138623). The site covers approximately 74ha and comprises arable fields with field margins, bounded by hedgerows, ditches, treelines and deciduous woodland. The site borders further arable land to the west, low density housing to the east and woodland to the north and south.

1.4 The approximate red line boundary of the site is shown in Figure 1. This was also the approximate survey boundary.

Figure 1: Approximate location of the site boundary

Description of Proposed Development

1.5 The proposals for the site include the construction of residential housing units with associated infrastructure and mixed-use elements, including a new school development and care village. A SANG will be created on the western aspect of the site. The southern field will not be developed.

Planning Policies

1.6 Any application will be assessed against the policy guidance provided by the National Planning Policy Framework, as well as relevant planning policies from the 'Mid Sussex

District Plan 2014-2031' contains local policies relating to nature conservation. The main policies drawn from the report, which are relevant to the site, are indicated below;

- DP17: Ashdown Forest Special Protection Area (SPA) and Special Area of Conservation (SAC);
- DP 37: Trees, Woodland and Hedgerows;
- DP 38: Biodiversity.

1.7 The reports have been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 Methodology

Desktop Study

2.1 A desktop study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the survey area and habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

2.2 A 2km data search was requested from Sussex Biodiversity Record Centre. A search of 2km around the redline boundary, for protected species, statutory and non-statutory designated sites, was requested and the results of which have been processed in Table 2.

Preliminary Ecological Appraisal

2.3 A phase 1 habitat survey, which included assessing the site for the potential for protected species was undertkaen on 27th April 2016. An extended preliminary ecological appraisal

was undertaken on 15th February 2018 with a further survey covering the extended area of the site to the northwest was surveyed on 17th July 2018.

Protected Species Assessments

2.4 Standard methods of search and measures of presence, or likely absence based on habitat suitability were used for bats in trees and buildings (Collins 2016), breeding birds[1], dormice (Bright *et al.* 2006), great crested newts (ARG 2010), reptiles (Froglife 2015), and badgers (Cresswell *et al.* 1990). The timings of each of the specific surveys are listed below.

Table 1 Protected Species Surveys

Faunal Group	Survey Methodology	Date of Surveys	Guidance
Bats – tree inspection	As part of the habitat surveys, any trees supporting particular features likely to be of value to bats, such as splits, cracks, rot holes, coverings of ivy, peeling bark or similar, were recorded. The potential for the trees to support roosting bats has been assessed in accordance with the criteria set out in the Bat Conservation Trust guidelines (BCT, 2012)	April 2016	Bat Surveys – Good Practice Guidelines' (Bat Conservation Trust, 2016);
Bats – activity surveys	Several dusk surveys and the use of remote recording (anabat surveys) across the site using transect methods and stops for recording activity as per Bat Conservation Trust guidelines (BCT, 2016)	17th August 2016 8th September 2016 Anabat Express was deployed on site and recorded data from the 25th August – 29th August and from 20th September – 24th September 2016 17th May 2018, 20th June 2018, 11th July 2018, 15th August 2018 and 12th September 2018 Anabats (total of 7 anabats across the site) were deployed for 5 nights per month May – September 2018.	The surveys followed BCT guidelines (2016).

[1] https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence

Reptiles	The refugia were placed around the edges of the site adjacent to areas of scrub, hedgerow and within the more developed grassland field margins. Mats were set up prior to the commencement of the reptile survey. A total of seven survey visits were made to the site to check the refugia for the presence of reptiles during each survey. Visits were only carried out if the weather conditions were suitable for locating reptiles. On each visit to the site, a minimum of one circuit to check all refugia was carried out. Natural refugia were also surveyed during these visits. Any natural refugia, such as log piles and brash piles, were lifted and hand searched for evidence of reptiles.	12th September 2016 – 28th September 2016 3rd April 2019 – 21st May 2019	The timing and number of surveys completed were based on guidelines produced by Froglife (1999) and Gent and Gibson (1998).
Badgers	During the survey, all habitats potentially suitable for badgers were systematically examined for evidence of badger activity. Particular attention was paid to areas where the vegetation and/or the topography offered suitable sett sites such as embankments and wooded areas.	April 2016 15th February 2018 Monitoring April- May 2018	The evaluation of badger activity was based on methodology developed for the National Survey of Badgers (Creswell et *al*., 1990).
Great Crested Newt Surveys	Habitat Suitability Index Surveys conducted April 2016 Thirteen ponds were identified within 250m of the site to the south and west The ponds off-site were surveyed for their potential to support GCN using the Habitat Suitability Index criteria. The suitability index is calculated for each of the 10 categories. These are then analysed using the equation below to obtain the geometric mean or HSI score of the ten suitability indices. $\mathbf{HSI=(SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}}$ The calculated score should be between 0 and 1 and will fall within one of several bands, which correspond to a given category for the pond.	April 2016 April 2018	Oldham et al (2000)

	eDNA surveys conducted All water samples were taken by Emma Bagguley BSc (hons) Msc who holds a WML-CL08 GCN Survey Level 1 license – REF: 2016-23003-CLS-CLS. All water samples were analysed by SureScreen Scientifics in accordance with the protocol set out in Appendix 5 of Biggs *et al.* (2014). Population assessments following Natural England guidelines, involve bottle trapping, torching, netting and egg searching. Great Crested Newt Mitigation Guidelines (English Nature 2001).	June 2016 April – May 2018	Biggs et all (2014)
Dormice	A total of 50 dormouse tubes were established along the woodland edge, hedgerow and tree line habitats on-site, June 2016 Checks were undertaken once a month in June, July, August, September, October and November 2016. The survey must continue until the search effort score of 20 has been reached Suitable habitats for dormice were present within the woodland edge, hedgerow and tree line habitats on-site. Tubes were established in June and surveys ran into November, which have now been completed, ensuring that a survey effort of 20 had been reached.	June – November 2016 19th Septmber 2018 – 23rd October 2019	Dormouse Conservation Handbook – English Nature
Farmland Bird Surveys	The bird survey was conducted at the end of winter and during the spring of 2017. The survey was conducted once a month in February, March and May to catch a range of bird species that may be utilising the farmland habitats	23rd February 2017 29th March 2017 12th May 2017	The survey was conducted using standard Common Birds Census (CBC) methodology as developed by the British Trust for Ornithology (BTO) (Gilbert *et al.* 1998).

Limitations

2.5 It should be noted that while every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment.

3.0 Desktop Study

3.1. The site itself if not designated for its ecological importance or for its nature conservation value.

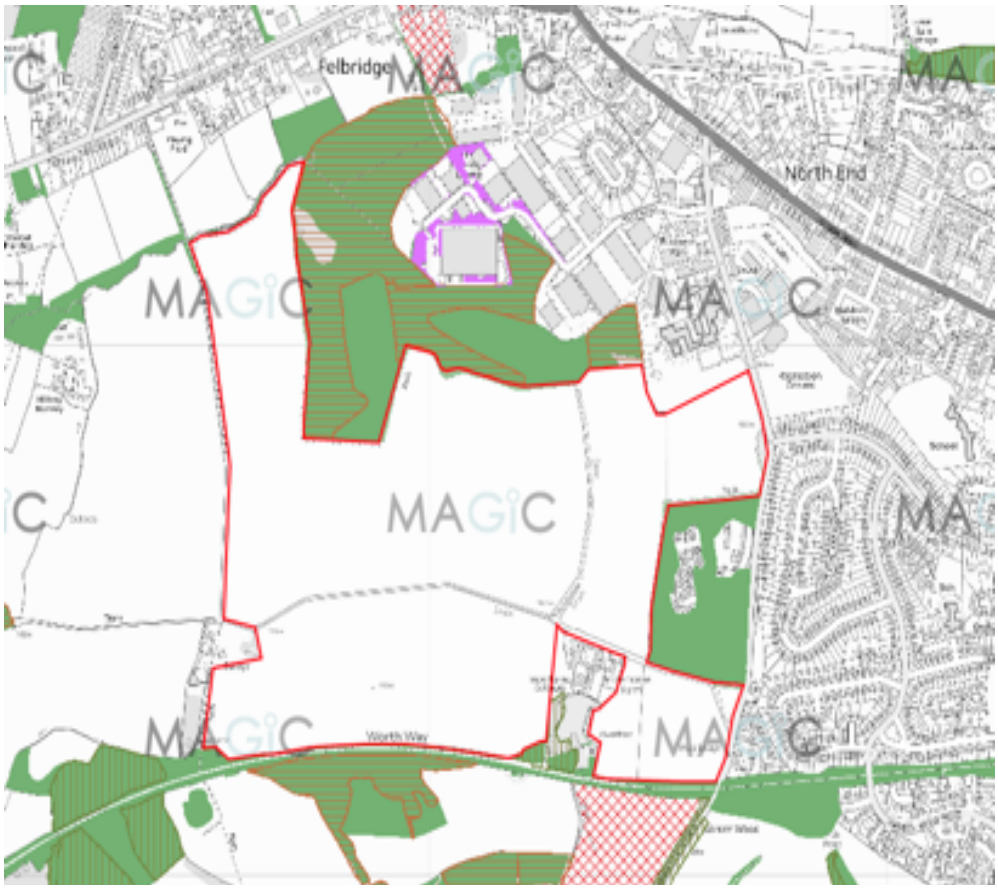
3.2. There is one designated site that lies within 2km of the site, Hedgecourt SSSI is located approximately 1.9km to the north west of the site. The site was designated as a SSSI due to the occurrence of notable aquatic vegetation, invertebrates and breeding birds.

3.3. Ashdown Forest SPA, SAC and SSSI is located just over 5km from the red line boundary. Two SNCIs are found within the local area, Worth Way approximately 30m south and Lobbs Wood and Furnace Ponds 2km west of the site.

3.4. In addition, there are a number of notable habitats on site or in close proximity which include (Figure 2):

- Unnamed deciduous woodland is located immediately north of the site.
- Birches Shaw ancient replanted woodland is located approximately 10m north of the site.
- A separate compartment of Birches Shaw ancient replanted woodland is located immediately to the north of the site.
- Unnamed good quality semi-improved grassland is located approximately 0.2km to the north.
- Unnamed deciduous and broadleaved woodland is located immediately to the east of the site.
- Unnamed deciduous woodland is located immediately to the south of the site.
- Coles ancient replanted woodland is located approximately 0.2km to the south of the site.
- Great ancient replanted woodland is located approximately 0.2km to the south of the site.
- Railway Shaw ancient and replanted woodland is located approximately 20m to the south of the site.
- Gulledge ancient and semi-natural woodland is located approximately 80m to the east of the site.

- Greenfield Shaw ancient replanted woodland is located approximately 0.5km to the east of the site.



"Map produced by MAGIC on [13/02/18]. © Crown Copyright and database rights [2018]. Ordnance Survey 100022861. Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of information that is being maintained or continually updated by the originating organisation. Please refer to the documentation for details, as information may be illustrative or representative rather than definitive at this stage".

Figure 2: Priority deciduous woodland (green), ancient woodland (brown hatch) and no main habitat but additional habitats (red cross hatching) habitats in the locality of the site.

3.4 A 2km radius data search was requested from Sussex Biodiversity Records Centre (SxBRC) records centre. Notable species from this search are outlined below (Table 2). Only records from within the last 10 years, closest to site and relevant to the habitats on site have been included. It should be noted these records are from 2016, additional records may have been added in the intervening years.

Table 2: Notable species recorded within 2km of the site over the last 10 years

Species	Status	Record distance	Record year
Great Crested Newt *Triturus cristatus*	Wildlife and Countryside Act (1981 as amended) Schedule 5; Bern Convention Appendix 2; European Protected Species; Habitats Directive Annex 2 & 4; NERC Act (2006) Section 41	Approximately 1.5km N	2012
Daubenton's Bat *Myotis daubentonii*	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 1.8km N	2008
Common Pipistrelle *Pipistrellus pipistrellus*	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 1.7km N	2014
Soprano Pipistrelle *Pipistrellus pygmaeus*	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 1.8km N	2008
Brown Long-eared Bat *Plecotus auritus*	Conservation of Habitats and Species Regulations (2010) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately 1.7km N	2014
Peregrine *Falco peregrinus*	Wildlife and Countryside Act (1981 as amended); Birds Directive Annex 1; Bern Convention Appendix 2	Within 2km	2012
Hobby *Falco subbuteo*	Wildlife and Countryside Act (1981 as amended) Schedule 1; Bern Convention Appendix 2	Within 2km	2011
Black Redstart *Phoenicurus ochruros*	Wildlife and Countryside Act (1981 as amended) Schedule 1; Bern Convention Appendix 2; Red List BoCC	Within 2km	2011
Cuckoo *Cuculus canorus*	NERC Act (2006); BoCC Red List	Approximately 1.2km SW	2010
Common Crossbill *Loxia curvirostra*	Wildlife and Countryside Act (1981 as amended) Schedule 1; Bern Convention Appendix 2	Approximately 1.2km SW	2012
Red Kite *Milvus milvus*	Birds Directive Annex 1; Wildlife and Countryside Act (1981 as amended) Schedule 1; Convention on Migratory Species Appendix 2	Approximately 1.2km SW	2012
Redwing *Turdus iliacus*	Wildlife and Countryside Act (1981 as amended) Schedule 1; Birds Directive Annex 2.2; Red List BoCC	Approximately 1.9km N	2012
Fieldfare *Turdus pilaris*	Wildlife and Countryside Act (1981 as amended) Schedule 1; Birds Directive Annex 2.2; Red List BoCC	Approximately 1.2km SW	2011

4.0 Phase 1 Habitat Survey

4.1 The site is comprised largely of arable land fields with semi-improved grassland field margins, a field of grazed semi-improved grassland is situated in the southeast corner of the site. The fields are bounded by a combination of hedgerows, fence lines, treelines and broadleaved woodland compartments, a ditch containing running water also runs from south to north in the central northern area of the site. A hardstanding road, also a public right of way, runs from east to west across the centre of the site. The site is private but features a number of public rights of way across the site and around the field boundaries. An area of amenity grassland added to the site in 2018 was not accessible to survey at the time.

4.2 The habitat map is shown below in figure 3.

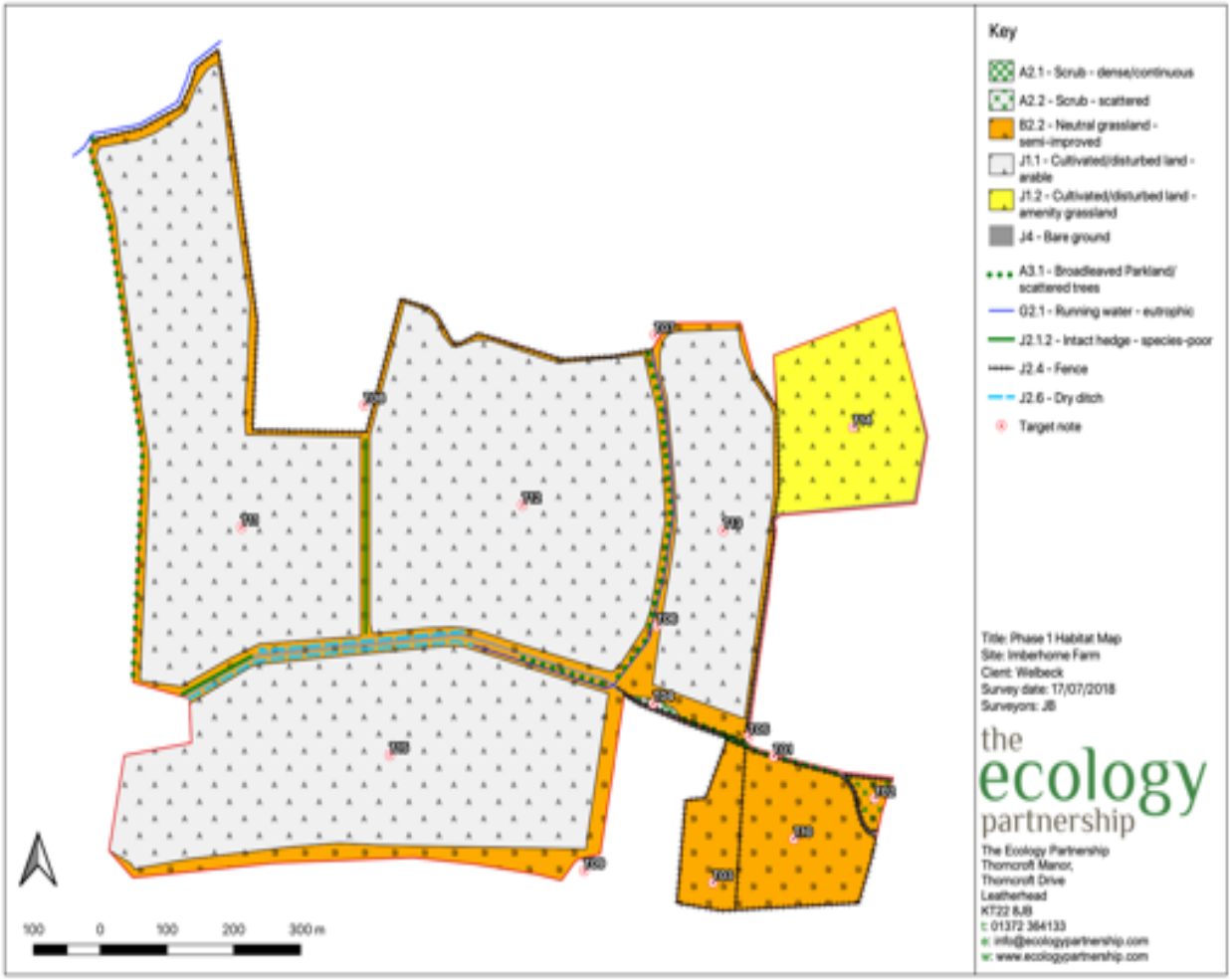


Figure 3: Habitat Map updated 2018

4.3 The habitats are summarized below:

- Arable: There were four arable fields which dominated much of the site. The three northern arable fields (Target notes T11, T12 & T13) contained wheat and the southern field (Target note T15) contained a sown grassland mix.
- Semi improved grassland: Several areas of semi improved grassland were located within the redline. There is an area of south eastern corner of the site, with further areas located around the field margins.
- Scrub: Small sections of scrub included the dominant species;, such as bramble, broom, hazel, blackthorn, silver birch with spear thistle, curled dock and ribwort plantain.
- Mature tree line: The northern boundary of the south east section of the site consisted of a mature tree line with species including English oak, holly, silver birch, honeysuckle, horse chestnut, hawthorn, cherry laurel and English elm.
- Intact hedgerows located on the boundaries of the site. Some of these supported native spieces whilst one supported rhododendron. Intact species rich hedgerow with trees are also located on the site, recorded on the western boundary of the western boundary of the most westerly arable field was an intact species rich hedgerow with trees.
- Tree lines were located on the edges of the site including the northern boundary of the most westerly arable field, with a tree line running north to south between the eastern and centre arable fields. The western boundary of the site featured a tree line with a well-developed scrub understory, it bordered a stream to the north.
- Bare earth/ Hardstanding:A concrete access road ran from east to west across the centre of the site, connecting the site to the adjacent Imberhorne Lane. A gravel footpath also ran along the eastern site boundary to the north of the road.
- Dry ditches were situated either side of the road running along the centre of the site.
- Fence lines were located around the grazed semi-improved grassland and along the northern arable fields bordering the adjacent woodland to the north.
- Running water: A stream was identified running from south to north across the centre of the site, culverted under the hardstanding road. The stream continued off-site into the adjacent broadleaved woodland compartment to the north.

4.4 Four hedgerows were present on-site along the field margins and site boundary and are illustrated in Figure 4. None of the hedgerows were considered to be 'important'. The hedgerow characteristics and woody species are summarised in table 3.

Figure 4: Hedgerows present on site

Table 3: Summary of hedgerow characteristics and assessment

Hedgerow	Woody species[1]	Structure/ Type	Features/ Notes	Important?
H1	Hawthorn, Ash, Yew, Hazel, Elm	Short, intact, trimmed, juvenile trees	Runs parallel to a ditch, gaps do not exceed 10% of length of hedgerow, Approx. 80m	N
H2	None	Short, intact	Gaps do not exceed 10% of length of hedgerow Approx. 30m	N
H3	Hawthorn, Hazel, Dogwood	Trimmed regularly	Gaps do not exceed 10% of length of hedgerow Approx. 270m	N
H4	Blackthorn, Cherry, English oak,	Un-managed	Approx. 130m.	N

[1] Woody species listed under Schedule 3 of the Hedgerow Regulations 1997

5.0 Protected Species – Bats

5.1 There were a number of individual trees which had 'low' to 'moderate' roosting potential for bats. The trees target noted within the PEA report contain potential roosting features such as woodpecker holes, rot holes, trunk and branch splits, loose bark and cavities, which can all be utilised by bats for roosting purposes. It is considered that the majority of these are to be retained within the scheme.

5.2 Surveys undertaken on land adjacent to the site to the east, Imberhorne Lane, in May, June and September 2009 by Nicholas Pearson Associates, identified the most common species using the site were common and soprano pipistrelles. Myosits species and brown long eared bats were recorded only occasionally across the site.

5.3 Bat activity transect surveys were carried out on the 17th August and 8th September 2016 and further surveys on the 17th May, 20th June, 11th July, 15rd August and 12th September 2018. The surveys followed Bat Conservation Trust guidelines (Collins, 2016). Three transect routes were mapped using Google Earth imagery that took in all the areas of suitable habitat identified during the initial PEA.

5.4 The walked transects indicated a low to moderate level of activity across the site comprised of largely common species. Common pipistrelle was abundant with occasional soprano pipistrelle, infrequent noctule and Myotis sp. and very low numbers of brown long-eared and serotines.

5.5 The activity comprised a largely equal mix of both foraging and commuting passes. There was a noticeable bias for commuting activity to the centre and east of the site, whereas foraging activity was more evenly spread across the site. This is perhaps due to the site bordering more developed habitat to the east whereas the west connects to a network of mature woodland and hedgerows, providing better foraging opportunities. Activity was greatest along the northern woodland edge, northwest corner of the site and along the sections of road and footpath where overhead trees had formed a closed canopy.

5.6 The static detectors largely reflected the findings of the walked transects, with common pipistrelle by far the most frequently recorded species and occasional soprano pipistrelle

passes, low numbers of noctule and myotis and very low numbers of brown long-eared bat and serotine. The static detectors also indicated the presence of Leisler's bat and Nathusius' pipistrelle species, albeit at very low levels of activity.

5.7 As a whole, the site is considered to be of local importance for bats, while high levels of activity were recorded in specific areas of the site, the activity was dominated by common species, with only small numbers of scarcer species such as Myotis and noctules. In addition, much of the site was considered of low quality for bats, comprised of habitats of limited value to bats such as large arable fields and grassland.

5.8 Recommendations for enhancements for bat include; creation of new tree lines and hedgerows, species rich planting, wildlife planting around SUDs and drainage pond features, use of wildflowers in grassland, low light levels and buffering of significant habitats. The SANGS space, will create a significant uplift in terms of suitable habitat for foraging bats. Bat boxes will also be introduced within the scheme.

6.0 Protected Species – Reptiles

6.1 The site was surveyed for reptiles in September 2016 by Ecology Partnership. The survey identified the presence of "low" populations of both slow worm and common lizard. The reptiles were largely restricted to the eastern site boundary and southeast field.

6.2 An update survey was undertaken between April and May 2019. Over eight visits, a peak count of 1 adult grass snake, 1 adult slow worm and 3 adult common lizards were identified.

6.3 Three species of reptile was identified on-site, grass snake, slow worm and common lizard. The reptiles were primarily situated in two locations on-site, the triangle of land on the eastern site boundary and adjacent to the school in the northeast corner.

6.4 When compared to surveys undertaken in 2016, the peak numbers of common lizard increased slightly from 1 to 3, with slow worm numbers staying the same. In addition, grass snakes were not identified previously. The reptiles do not appear to have spread across the site, with the majority identified in the same location as the previous survey. Notably, no reptiles were found in the southeast field in 2019, this area was heavily sheep

grazed and therefore considered unsuitable for reptiles. The majority of the site was considered to be unsuitable for reptiles, with the arable landscape being of negligible importance to this species.

6.5 A receptor area should be established within an area of the site proposed as green space. The receptor should be suitable for holding reptiles from the commencement of the trapping period. The design of the development, notably with areas of open green space, SANGS, will provide sufficient opportunities to support reptiles within the site. A range of enhancements, including grassland habitats, scrub and log pile mosaic, will be introduced as part of the scheme. It is considered that the site has plenty of space to support reptiles on site and in perpetuity.

7.0 Protected Species – Dormice

7.1 Initial surveys were undertaken in June, July, August, September and November 2016 did not find any evidence of dormice using any of the nest tubes within the site.

7.2 Dormouse nest tubes were re-established across the site's hedgerows and treelines on 19th September 2018 to provide an update surevy. A total of 130 dormouse tubes were established along the boundary treelines and hedgerows on site. Checks were undertaken monthly in October 2018 to October 2019.

7.3 No evidence of dormice was identified during these surveys, such as nests, feeding remains or live individuals, in any of the nest tubes on site. The only species found to be using the tubes were wood/yellow-neck mice

7.4 Dormice are not considered to be present and the site is not considered to be constrained by dormice.

8.0 Protected Species – GCNs

8.1 In 2016 a total of 13 ponds were identified within 250m of the site boundaries. Ponds 4 – 9 could not be accessed for eDNA surveys. Ponds 1, 2 and 3 supported dense stocking of fish and were not considered suitable for GCNs, ponds 10, 11, 12, 12a and 13 were sampled

for DNA. Ponds 11, 12, 12a and 13 were identified as being negative for DNA. Pond 10 was positive and support GCN DNA and therefore GCN presence was confirmed.

8.2 Update GCN surveys were conducted in 2018. A ditch containing slow flowing water was identified in the centre of the site, a further 16 ponds were identified within a 250m radius with a further five ponds within 500m. Given the poor quality of the on-site habitat only ponds within 250m were surveyed further for GCN.

8.3 Ponds P1, P2 and P3 were commercial fishing lakes and so were not considered further. Therefore, the on-site ditch and, where access permitted, fourteen off-site ponds were surveyed using a combination of the following methods. These ponds were numbered for ease of reference (Figure 5).

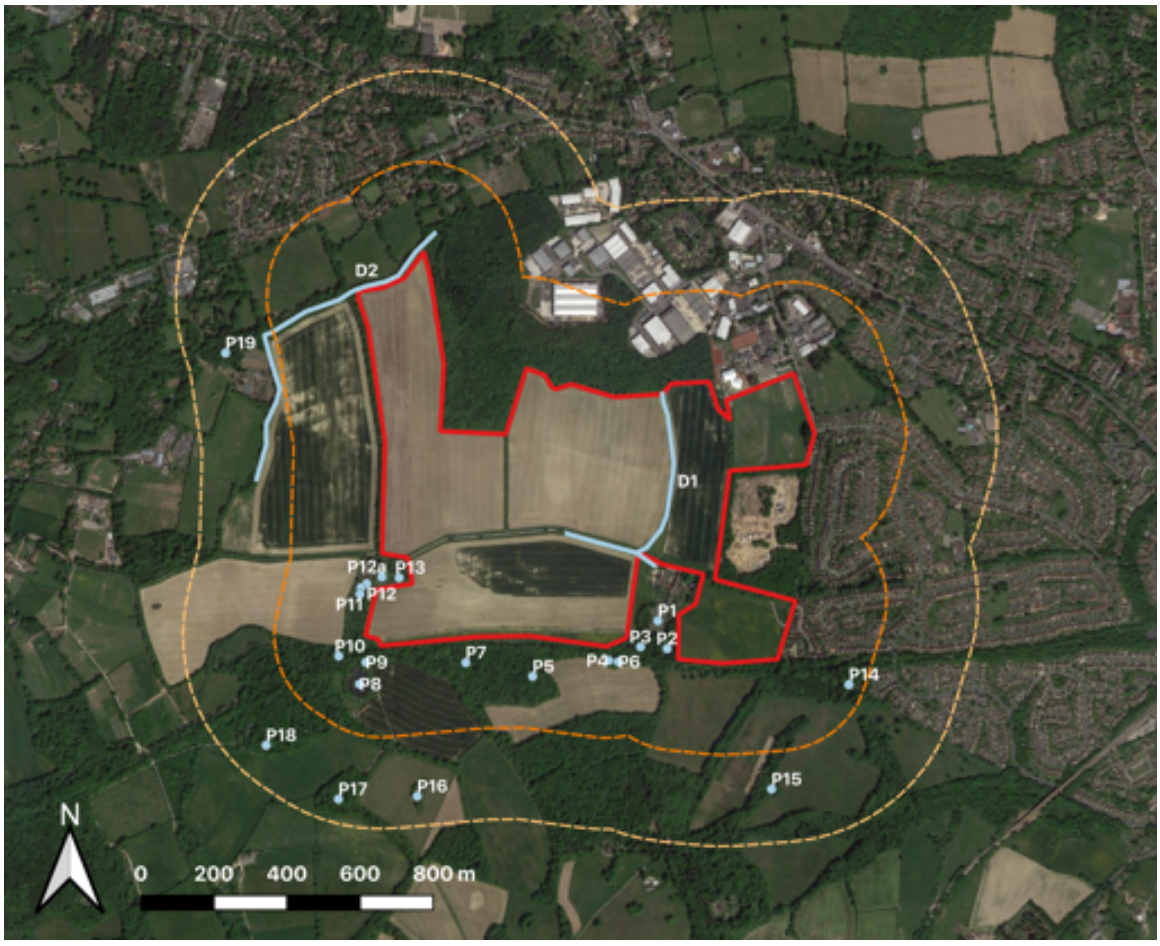


Figure 5: Waterbodies within 250m and 500m of site boundary, labelled for ease of reference. Dashed dark orange polyline indicates 250m site buffer and dashed yellow polyline indicates 500m site buffer.

8.4 Permission was granted for eDNA surveys to be undertaken on ponds P12, 12a and P13 situated within private land off-site in 2018. These ponds, ponds 12, 12a, and 13 were found to be positive for eDNA and as such these ponds were considered to support GCNs.

8.5 Additional pond surveys were undertaken on ponds P8, P9, P10, P11 and P11a and ditch D1 order to determine presence/likely absence and approximate population sizes.

8.6 Of the waterbodies surveyed further, three were found to contain adult GCNs, ponds P9, P11 and P11a all supported a small population. In addition, GCN eggs were identified on vegetation within ponds P8, P11 and P13, indicating they are in use as breeding ponds. GCN were considered likely to be absent from ditch D1 and P10 at the time of the survey. The peak count recorded on a single survey night was 7 adult GCN. The results are shown in figure 6.

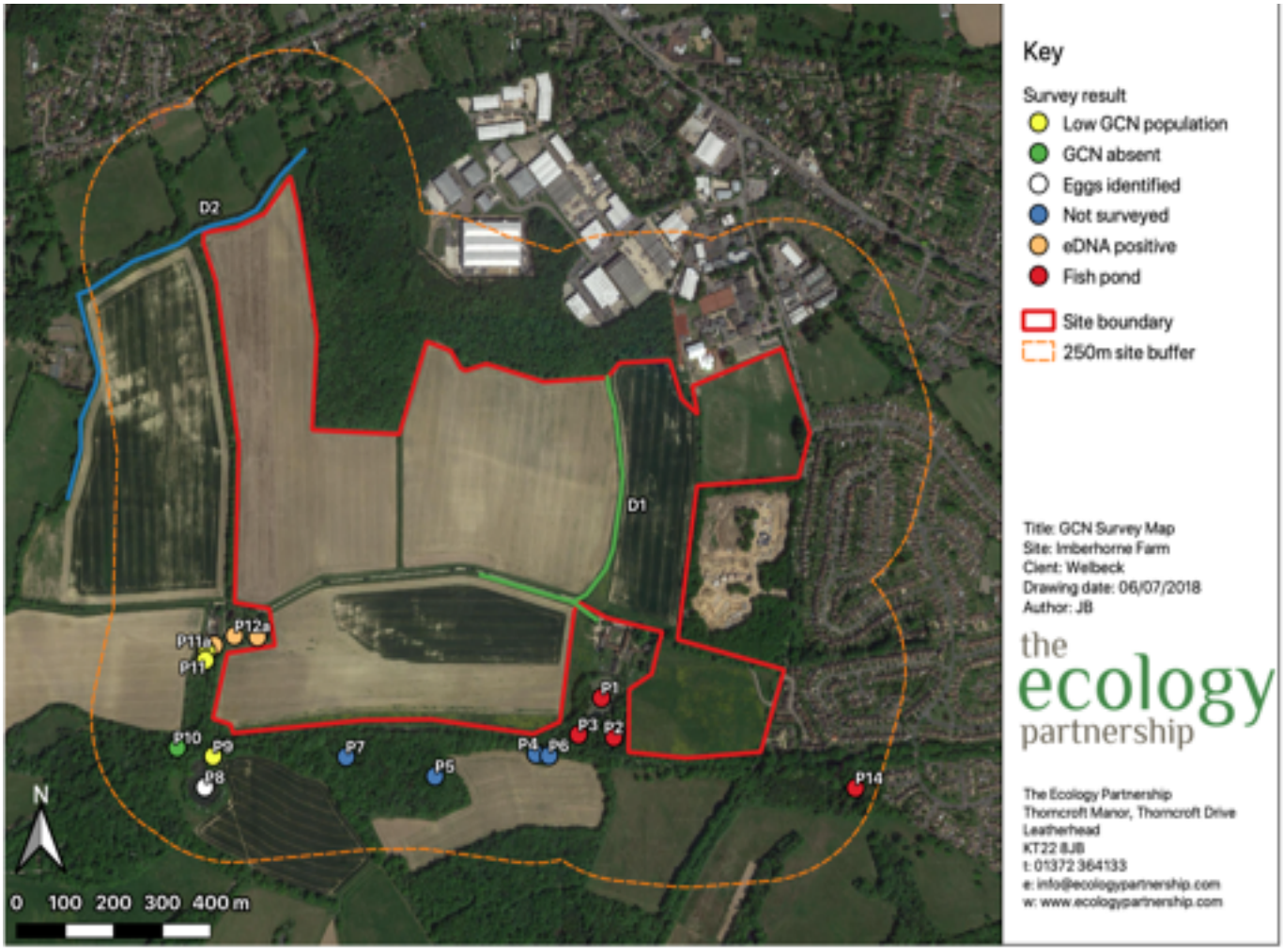


Figure 6: Location of surveyed ponds in relation to the redline boundary.

8.7 The western and southern areas of the site closest to the GCN ponds are to be kept free of development and managed as a country park/suitable alternative natural greenspace (SANG). As such it is considered that the terrestrial habitat around the ponds which support GCNs, will be significantly improved as a result. Whilst there will be a change in land use, the changes will be of benefit to GCNs and other amphibians.

8.8 The proposals do not result in the isolation of GCN populations or direct impacts upon GCN ponds. While the actual development will take place away from GCN ponds and within terrestrial habitat of poor suitability, given the large scale of the development consideration must be given towards GCN.

8.9 A range of measures to enhance the site for GCNs has been recommended. This includes but not limited to; use of wildlife friendly SUDs systems, creation of wildlife ponds, enhancement of terrestrial habitat, enhanced hedgerows and refugia. A licence maybe required depending on the final layout. Sensitive clearance works will be recommended. The country park / SANGS will be considered a significant enhancement in terms of terrestrial habitat availability.

9.0 Protected Species – Badgers

9.1 The site was surveyed for badgers in January 2018, five badger setts were identified on-site or within 20m of the site boundary where access was possible.

9.2 Setts 3, 4 and 5 were all situated within or on the edge of woodland on the site boundary and a sufficient distance from any proposed development, the proposals are therefore not considered to be constrained by the presence of these setts and no further monitoring was considered necessary. These were also largely individual holes and therefore unlikely to be a main or breeding sett.

9.3 Setts 1 and 2 were both within proximity to proposed development, further monitoring of these setts was therefore undertaken in order to determine if the holes were active badger setts and in what capacity they were in use.

Figure 7. Location of badger setts identified during January 2018 survey.

9.4 Both sett 1 and sett 2 were considered active badger setts. Given the presence of badger cubs and well-developed nature of the holes, it is considered that sett 1 is a main breeding sett. Sett 2 appeared to be used only on an occasional basis and comprised of a single hole, typical of an outlier sett.

9.5 Sett 1 is to be retained within the scheme and suitably buffered. Sett 2 may be impacted by the development, and as such would require closure. However, it is considered that the development support sufficient open space and green corridors to ensure badgers are able to move across the landscape. Enhancements for badgers will be included within the design and include, planting native fruiting species and hedgerow species, maintaining and enhancing green routes and corridors. Impacts are not considered to be significant.

10.0 Protected Species – Breeding Birds

10.1 The bird survey was conducted once a month in February, March and May 2017 to catch a range of bird species that may be utilising the farmland habitats. A total of 21 species were recorded over three survey visits. Of these, some were only recorded once, including fieldfare and redwing, and therefore are more likely to be using the site as they pass through.

10.2 Farmland bird species considered to be in decline that were found to be actively using the site included 2- 3 breeding pairs of yellowhammer and 3 – 4 pairs of skylark.

10..3 Goldfinch, woodpigeon, whitethroat and jackdaw are all listed on the Farmland Indicator List, however these birds show a general increase in population trend. These species were also found on site in moderate-high numbers.

10.4 It is considered that several of the common species on site are likely to nest within the hedgerows throughout the site and in the woodland that borders the site to the north and south. These species include but are unlikely to be limited to blackbird, blue tit, chaffinch, chiffchaff, dunnock, goldfinch, great tit, green woodpecker, house sparrow, magpie, robin, woodpigeon and wren.

10.5 Recommendations include the maintenance and enhancement of hedgerows and associated edges, including enhancing the woodland edges, creation of native planting within SUDS systems, provision of graduated habitat edges, dense scrub pockets and native tree planting.

10.6 Skylark, which require more specialised ground nesting provisions, can be created within the SANGS are or on off site arable land. However, winter starvation is often associated with skylark reduction, due to changes in arable management, The creation of flower and species rich habitat edges, wildflower areas, and provision of more diverse habitats, within the SANGS area, will provide opportunities for increased foraging over winter. As such, compensation for ground nesting habitat and provision of enhanced planting / landscape provision is likely to provide some interest, albeit may still result in a loss of some suitable ground nesting provisions.

11.0 Ecological Imapcts

11.1 An EcIA was produced as part of the application for the site in 2018. The summary of the impact assessment has since been reviewed due to slight changes in the baseline, including the identification of badger setts on site.

11.2 Residual impacts are considered below taking the up to date development proposals, construction and operational impacts, alongside mitigation measures. The outcome of the layout of the site and the mitigation measures employed throughout the construction and operational stages of the development aim to removal, where possible, any residual impacts.

Table 4 Residual Effects Resulting from the Proposals

Receptor **Receptor Importance**	**Significance before mitigation**	**Mitigation**	**Residual Impacts**
Ashdown Forest SPA, SAC, SSSI (International)	Major negative	On site SANGS On site recreation including play areas On site links to wider landscape footpaths and cycle paths Green links and corridors around the site	Negligible
Hedgecourt SSS1 (National)	Major negative	On site SANGS On site recreation including play areas On site links to wider landscape footpaths and cycle paths Green links and corridors around the site	Negligible
Worth Way (adjacent to the site) SNCI (Local)	Minor negative	On site SANGS On site recreation including play areas On site links to wider landscape footpaths and cycle paths Green links and corridors around the site	Negligible
Local wildlife sites including;	Minor negative	On site SANGS On site recreation including play areas	Negligible

Lobbs Wood and Furnace Wood (local)		On site links to wider landscape footpaths and cycle paths Green links and corridors around the site	
Ancient woodland and lowland deciduous woodland (adjacent to the site to the north and south of the site) (local)	Minor negative	15m buffer zones implemented around the site Further use of SUDS and attenuation ponds to provide a larger buffer in addition to the 15m No gardens to back on to woodland habitats No lighting adjacent to woodland edges Long term management of semi natural habitats associated within the buffer to enhanced the habitat and species diversity	Minor positive
Mature and semi mature trees (site)	Negligible	Long term management plan and including tree management	Minor positive
Habitats lost: including semi improved grassland, ruderal habitats and pockets of scrub (site)	Minor negative	N/A	Negligible
Newly created habitats including outside new POS and Country Park areas: Semi-improved grassland, wildflower grassland and scrub/shrub planting (site)	Negligible	Long term management plan	Minor positive
Country Park / SANGS	Negligible	Long term management plan Multiple habitats created, including	Minor positive

		woodland, scrub land, new ponds and wildflower habitat	
Green corridors and green links	Negligible	Retention of trees and off site woodland, improved management, new planting	Minor positive
Attenuation ponds	Negligible	Long term management plan Native species planting and edge habitat creation	Minor positive
Bats foraging (Local)	Minor negative	Retention of trees and off site woodland, improved management, new planting included enhanced buffer zones Country park / SANGS area provision of new diverse habitat on site Implementation of sensitive lighting scheme providing dark corridors Erection of bat boxes	Minor positive
Bats roosting (local)	Negligible	Retention of trees and off site woodland, improved management, new planting Erection of bat boxes	Minor positive
Badgers (Local)	Minor negative	On site setts retained and buffered, potential for disturbance. Improved habitat creation and new planting including species which badgers can forage from. Green edges and links allow badgers to move across the wider landscape.	Negligible
Reptiles (Local)	Minor negative	Translocation of reptiles following best practice.	Negligible

		New planting enhancements and sensitive habitat management post development	
Dormice	N/A	N/A	N/A
GCNs	Minor negative	Buffer zones created and enhanced, new terrestrial habitat enhanced, refugia, new planting etc long term management	Minor positive
Birds	Minor negative for skylark Negligible for common birds within the site	Skylark habitat created within the GCN / reptile zone within country park / SANGS area Maybe subject to disturbance from recreation New diverse habitat creation in buffer zones, woodland, green corridors Bird boxes within the scheme.	Minor negative Negligible

12.0 Enhancements

12.1 Site enhancements have been recommended to improve the quality of the site for protected species, provide net gains to biodiversity post-development and to ensure that the proposals comply with local planning policy. It is important to use native species of local provenance in landscaping schemes to enhance the ecological value of a development.

12.2 Enhancements for the site are aimed at a number of species found on site as well as more general enhancements. These will include but not be limited to the following:

- Creation of new high distinctiveness habitats including orchard, lowland meadows, native hedgerows, reedbeds, and ponds, to be managed in the long term for biodiversity;

- Enhance connectivity between woodland blocks, including off site woodland habitats;
- Installation of specialist bird and bat boxes on retained mature trees along the site boundary as well as through the use of integral boxes;
- Creation of log piles and reptile hibernacula to provide safe refuge and hibernation sites for reptiles, amphibians, and, hedgehog; and,
- Incorporation of small holes at the base of any proposed garden fencing to facilitate access to gardens for hedgehogs;
- Appropriate management of retained greenspace for the benefit of wildlife.

12.3 The design of the development supports 'Green Infrastructure' aspirations. Green infrastructure provides a network of interconnected habitats to enable dispersal of species across the wider environment and to provide ecosystem services, including but not limited to, enhancements for pollinators, water filtration and flood prevention. The creation of a number of networks within the site and through the site, using a range of differing habitats, provides an enhanced landscape. The country park / SANGS will provide a significant area of on site habitat creation.

13.0 Conclusions

13.1 The land at Imberhorne Farm is dominated by both arable and semi-improved grassland fields. There are numerous treelines and hedgerows surrounding the fields, and ancient woodland along the northern and southern boundaries. The buildings belonging to the Imberhorne Farm are not included in the development area. Numerous waterbodies are present to the southwest of the site.

13.2 The site has been subjected to numerous surveys including bats, badgers, reptiles, birds, dormice and GCNs.

13.3 The site supports a 'low' populations of common lizards, slow worms and grass snake. The site does not support any GCNs ponds, however, a number of ponds are located to the south west of the site has been identified as supporting GCNs, albeit in low numbers. No ponds are to be lost to the development. Terrestrial habitat improvements are recommended, alongside new wildlife ponds.

13.4 The site supports numerous common bird species, with some species of conservation concern, such as the yellowhammer and skylark. Recommendations for enhancing breeding bird opportunities, have been recommended.

13.5 The site supports a range of bat species using the site, dominated by common pipistrelles. Recommendations for a range of habitat enhancements have been made, including provision of new tree lines and layered habitat edges.

13.6 No dormice have been identified on site. No specific considerations for this species are therefore made.

13.7 Several badger setts are present on site, including a main breeding sett. It is considered that these are likely to be able to be retained on site. However, update surveys would be required. The landscape will include green links and corridors and native species planting to provide opportunities for foraging badgers.

13.8 The design of the development provides new opportunities for a range of species found to be on site, with opportunities to enhance habitats for CGNs and reptile species. The site maintains habitat connectivity and linkages, ensuring bat foraging habitat and commuting corridors are maintained within the scheme. New opportunities for roosting will be provided.

13.9 The skylark will lose habitat as a result of the development. Whilst the country park / SANGS provision can provide some habitat, and through careful management can control access to an area of the site, disturbance could occur through recreational pressure. The skylark is most likely to be impacted by the development. As such a minor negative impact is predicted on this species, even if the mitigation proposed is implemented. However, the more common birds found within the site are likely to have experience negligible impacts.

13.10 Habitats within the site were considered to be common and widespread. Off site habitats included ancient woodland and lowland deciduous woodland, which were considered to be of ecological value. Worth Way, an SNCI, is located adjacent to the southern boundary.

13.11 Impacts from development on offsite and adjacent habitats, including ancient woodland and lowland deciduous woodland, SNCIs and other local designated sites are not considered to be significant. The development includes an extensive country park / SANGS which will provide new ecological opportunities within the landscape, connecting to buffer zones and off site habitats in and around the site and as such preserving ecological networks. With the design of the development maintaining such linkages and provide new habitats within the site, it is considered no impacts on these habitats are predicted.

13.12 The site is located within 7km of the Ashdown Forest SPA, SAC and SSSI. It is considered that without mitigation, increased recreational pressure could have a negative impact on the designated site. The masterplan for the site shows that appropriate mitigation in the form of SANG is present and therefore no significant negative impacts will be caused. It is considered that this provision and the links to local footpaths provide sufficient public recreational space to limit the impact on the SPA.

The Ecology Partnership Ltd

Thorncroft Manor

Thorncroft Drive

Leatherhead

KT22 8JB

Tel: 01372 364 133

www.ecologypartnership.com

Approved: Alexia Tamblyn MA (Oxon) MSc CEnv MCIEEM FRGS

Date: 26/06/2020