

**Land South of Green Lane,
Chesterton**
Ecological Appraisal Report

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Issuing office

Worton Park | Worton | Oxfordshire | OX29 4SX
 T: 01865 883833 | W: www.bsg-ecology.com | E: info@bsg-ecology.com

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| Approved for issue to client | Roger Buisson | Associate Director | 15 September 2022 |
| Issued to client | John Baker | Principal Ecologist | 15 September 2022 |

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1 Introduction

Background to commission

- 1.1 BSG Ecology was commissioned by Wates Developments Ltd in August 2020 to conduct ecological surveys at a parcel of land known as Land South of Green Lane, Chesterton, Oxfordshire (hereafter referred to as 'the Site' – see Figure 1) to inform a planning application for a residential development.

Site description

- 1.2 The Site is centred on Ordnance Survey National Grid reference SP558209 and is currently agricultural land. The Site borders existing residential development to the north-east, agricultural land to the south and a mix of agricultural land and recreational sport grounds to the west. Green Lane runs along part of its northern boundary and an unnamed road (single carriageway lane) runs along its western boundary.

Description of project

- 1.3 An outline planning application is being made for up to 150 homes, parkland, sports pitches and public open space, alongside landscaping, SuDs, green / blue and hard infrastructure, with vehicular and pedestrian/cycle accesses (all matters reserved except for means of access).

Scope of Study

- 1.4 This Ecological Appraisal Report presents the methods and results of a desk study, extended Phase 1 habitat survey, and specific surveys for badger, reptiles, dormice, bat activity and breeding birds.
- 1.5 This report presents the baseline ecological condition of the Site and sets out an assessment of the ecological impact of the proposed scheme and resulting mitigation measures to be proposed.

2 Methods

Desk study

- 2.1 A desk study was carried out to gather existing records and information on designated sites and protected or otherwise notable¹ species within the local area through a request with Thames Valley Environmental Records (TVERC). Information on non-statutory designated sites, protected, notable and invasive species within a 2 km radius of the Site boundary was obtained in April 2022.
- 2.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) database (Defra, 2021; accessed most recently April 2022) and Natural England's designated site information (Natural England, 2021) were also consulted to establish the ecological context of the Site and to search for information on internationally important designated sites and other statutory designated sites within 2 km.
- 2.3 Mapping available on MAGIC was also used to identify ponds within 250 m of the Site and for locations of ancient woodland.
- 2.4 Detail of the legal and policy protection afforded to relevant protected and notable species and designated sites is provided in Appendix 1.

Field survey

Extended Phase 1 habitat survey

- 2.5 A Phase 1 habitat survey of the Site and adjacent habitat (where access permitted) was conducted by Peter Newbold CEcol MCIEEM MEnvSci on 24 August 2020. Peter Newbold is a Principal Ecologist at BSG Ecology who has over 12 years' experience in the ecological sector. He has extensive experience of Phase 1 habitat surveys and assessing potential for habitats to support protected or notable species.
- 2.6 Habitats within the Site were identified, described and mapped with reference to industry standard Phase 1 habitat survey methodology, as detailed in the Phase 1 Habitat Survey Handbook (JNCC, 2010). The survey was 'extended' to include an assessment of the potential of the Site to support protected or notable species.
- 2.7 The time of year in which the Phase 1 habitat survey was carried is within the optimal period for this survey. There were no significant limitations identified to this survey.
- 2.8 In order to update this information, the Site was again visited in April 2022 by John Baker CEcol, MCIEEM and Principal Ecologist at BSG Ecology. John also has extensive experience in carrying out Phase 1 habitat surveys over 15 years.

Badger

- 2.9 A survey for badger *Meles meles* was undertaken by John Baker in March 2022. John has extensive experience of surveying for badger and holds a Class Licence for sett closures. This survey included searching suitable habitats within the Site for evidence of badgers (setts, paths, latrines, foraging holes). The survey covered all linear features and open areas.
- 2.10 Any setts located were recorded with information on number of entrances, extent of apparent activity in the vicinity and the presence of paths or latrines noted. This information was then used to determine the likely nature of the setts and whether they are in current use.

¹ Notable species here include those of national or local conservation interest. Species of national conservation interest are Species of Principal Importance (Section 41 of the NERC Act), those listed in Red Data Lists for England or the UK, red-listed species in *Birds of Conservation Concern* list (Stanbury *et al.*, 2021), and species designated Nationally Scarce or Nationally Notable.

- 2.11 The setts have been classified based on the following adapted definitions from Neal and Cheeseman (1996) and Harris *et al.* (1994):
- Main sett - Normally where cubs are raised and in continuous and regular use throughout the year. Typified by large spoil heaps/mounds and well-trodden paths. There can be many entrances to the sett (often with some of these disused), although a main sett can sometimes only have a single entrance. There may be a scratching tree or playing area near the sett and usually a sizable latrine nearby.
 - Annexe sett - Intermediate-sized and may be used by breeding badgers. Normally close (<150 m) to a main sett and connected to it by obvious paths. They may not be in use all the time, even if the main sett is very active but will be most of the time. May support a second litter if there is one.
 - Subsidiary sett - Similar to annexe setts but are likely to be further away (at least 50 m from the main sett) and not as well connected to the main sett as annexe setts. May only be used intermittently.
 - Outlier sett - Small setts with one or two entrance holes which are used sporadically by badgers as a temporary refuge (Neal & Cheeseman, 1996). Spoil heaps are likely to be small and there may not be obvious paths connecting to other setts.

Breeding bird surveys

- 2.12 Breeding bird surveys were carried out on the following dates: 19 April, 15 May and 7 June 2022. All three visits were at dawn. During the survey the location and activity of each bird detected (including those seen or heard) will be recorded and mapped using standard two-letter British Trust for Ornithology (BTO) species codes combined with activity symbols.

Bat activity surveys

Walked transects

- 2.13 The Site has been assessed as being of low value for foraging bats, as per industry guidance (Collins, 2016). Therefore three visits, one per season in spring, summer and autumn, were recommended. In 2021, the summer and autumn surveys were carried out. The spring surveys were carried out in 2022. A transect route was designed to sample the linear habitats which offer the most foraging potential around the two fields which make up the Site (see Figure 2). Dusk activity transect surveys were carried out on 26 August 2021, 22 September 2021 and 20 April 2022.
- 2.14 The transects were undertaken during the period of peak activity for bats from sunset until two hours after sunset. The methods employed take into account current survey guidance, including Collins (2016).
- 2.15 Bat activity was recorded using an Anabat Express. Surveyors recorded the numbers and species of bats (where identifiable in the field as heard on a BatBox Duet) onto a standard field recording sheet and also to provide additional detail on the behaviour of observed bats where possible. Field notes included a record of the time of each bat encounter, allowing results to be cross-referenced with the recorded data. The surveys were led by experienced surveyors and the survey effort and design was overseen by an experienced ecologists (Peter Newbold, Principal Ecologist at BSG Ecology and Rachel Bamford, Senior Ecologist at BSG Ecology who also holds a bat survey licence 2015-19249-CLS-CLS).

Static bat detectors

- 2.16 SongMeter 2 (SM2) automated bat detectors were used to gather data for bat activity within the Site. The static locations are shown on Figure 2. The detectors were programmed to begin recording from half an hour before sunset until half an hour after sunrise, allowing continuous monitoring to take place during the period when bats are active (i.e. sunset to sunrise).
- 2.17 The automated detector at Location 1 obtained data from the following dates:

- 3 to 9 May 2022 (six nights).
- 18 to 19 August 2021 (two nights only, due to detector malfunction)
- 16 to 22 September 2021 (six nights)

2.18 The automated detector at Location 2 obtained data from the following dates:

- 3 to 9 May 2022 (six nights).
- 16 to 22 September 2021 (six nights)

2.19 The WAV data files (the raw files recorded on the SM2s) were converted to ZC files using the software package Kaleidoscope in order to enable call analysis using Anlook software. The Kaleidoscope software creates sound files of varying lengths (minimum 2 seconds, maximum 5 seconds) once recording has been triggered by an ultrasonic pulse. A label was attached to each sound file corresponding to each species recorded within the file. Where it was clear that two or more individuals of the same or different species were flying together, files were labelled appropriately.

2.20 Long-eared *Plecotus* bat records were not identified to species level due to the overlapping call parameters of these species, however, given the current known range of grey long-eared *Plecotus austriacus* bats (largely restricted to the south coast of England) they are presumed to be brown long-eared bat *Plecotus auritus*. Species of the genus *Myotis* were grouped together as many of the species have overlapping call parameters, making species identification problematic.

2.21 For *Pipistrellus* species the following criteria, based on measurements of peak frequency, were used to classify calls:

- Common pipistrelle *Pipistrellus pipistrellus* ≥ 42 and < 49 kHz
- Soprano pipistrelle *Pipistrellus pygmaeus* > 51 kHz
- Nathusius' pipistrelle *Pipistrellus nathusii* < 39 kHz
- Common pipistrelle / soprano pipistrelle ≥ 49 and < 51 kHz
- Common pipistrelle / Nathusius' pipistrelle ≥ 39 and < 42 kHz

2.22 In addition, the following categories were used for calls which could not be identified with confidence due to the overlap in call characteristics between species or species groups:

- *Myotis* sp./ *Plecotus* sp. (*Myotis* or long-eared species)
- *Nyctalus* species (either noctule *Nyctalus noctula* or Leisler's bat *Nyctalus leisleri*)

2.23 The data was exported into a spreadsheet in order to interpret the recordings. The timing of passes after sunset and before sunrise was calculated in order to interpret any patterns in bat activity across the night-time period.

Great crested newt surveys

2.24 Great crested newt *Triturus cristatus* surveys were carried out in 2022. Three waterbodies were identified within 250 m of the Site and are shown in Figure 3. One is present to the north in the Bicester Golf Course (Pond 1) and one to the south-west (Pond 2) in privately owned land, with rough grassland scrub and woodland. A third water body (Pond 3) was identified in a recent development which acts as a balancing pond.

2.25 Two visits using standard methods of survey (egg search and torch surveys after dark) were carried out on Ponds 1 and 2 on 5 May 2022 and 9 May 2022. On the latter date, eDNA samples were taken from Ponds 1 and 2 following methods set out in Biggs *et al.* (2014), and by this point Pond 3 was completely dry. As the analysis of the eDNA samples returned a negative result from Ponds 1 and 2 and that Pond 3 was dry, no additional surveys were carried out.

Dormouse surveys

- 2.26 In order to survey the Site's suitable habitats for dormice (hedgerows and woodland margins), 100 nest tubes were placed around the Site. Most of these (75) were placed on 26 August 2021 by Peter Newbold, Principal Ecologist at BSG Ecology who holds a dormouse survey licence (Licence number: 2016-21011-CLS-CLS). An additional 25 were installed in late March 2022 under the direction of John Baker, Principal Ecologist at BSG Ecologist who also holds a dormouse survey licence (licence number: 2016-22591-CLS-CLS).
- 2.27 Inspections were carried out on 22 September 2021 by Peter Newbold and 10 November 2021, 19 April 2022, 12 May 2022 and 7 June 2022 by John Baker. This survey effort is in line with the score system set out in the industry guidance (Bright *et al.*, 2006).

Reptiles

- 2.28 Reptile surveys were carried out on Site targeting the hedgerow bases and grassland margins present here. Figure 4 shown the locations of the lines of reptile refugia which were placed on 18 August 2021.
- 2.29 Inspections of these refugia and walked surveys of the grassland margins were carried out over seven visits: 2 September 2021, 7 September 2021, 10 September 2021, 16 September 2021, 22 September 2021, 23 September 2021 and 4 October 2021. This is in line with guidance in place at the time (Froglife, 1999 and Natural England, 2015), with surveys carried out in suitable weather (no rain and temperatures between 10° and 19° C) and during the active reptile season. The October visit was also carried out in suitable weather with no frosts having been recorded to this point, which means any reptiles in the area are likely to have still been active. The visits were carried out by Peter Newbold and Jonathan Slessor, both of which are experienced reptile surveyors.

Biodiversity Impact Assessment

- 2.30 In order to assess the changes to the biodiversity value of the Site, an approved metric (Defra 3.1) has been used to assess the baseline habitat present and the likely value of the Site post-construction, based on the existing proposed plans for the Green Infrastructure.

Limitations to methods of field surveys

- 2.31 One reptile survey was carried out in October but this was done in suitable weather with no frosts having been recorded before this date, meaning any reptiles in the area are likely to have still been active. The six visits before this also recorded no reptiles, therefore this is not likely to have constituted a limitation to survey effort or assessment. The industry guidance in use at the time of the surveys (Natural England, 2015) has been modified in 2022 however this guidance on the Natural England website quotes Sewel *et al.* (2013) which in essence recommends the same survey technique and survey effort, therefore the survey effort undertaken is appropriate for the habitats present and sufficient to carry out the assessment presented in this report.
- 2.32 A fault in the detectors in August 2021 meant that limited data was collected at Location 1 and no data for August was collected at Location 2. However an extra night of data was collected in September 2021 and May 2022. The Site is also dominated by arable land with the central hedgerow, on which Location 2 was placed, leads north through from woodland in the south but only to a residential area on the northern edge of the Site, suggesting this is highly unlikely to constitute a significant commuting route for bats. The data gathered is therefore considered sufficient for the purposes of this assessment.
- 2.33 No other limitations were identified for the field surveys.

3 Results and evaluation

Designated sites

Statutory Designated Sites

- 3.1 There are no nationally or internationally important sites designated present within 2 km of the Site. The closest is Weston Fen Site of Special Scientific Interest (SSSI), located 3.1km to the west of the Site.

Non-statutory Designated Sites

- 3.2 There are six non-statutory designated sites within 2 km of the Site. These are summarised in Table 1.

Table 1 – Non-statutory designated sites within 2 km of the Site

| Site Name and status | Distance and direction | Description |
|---|------------------------|--|
| Bowlers Copse - Cherwell District Wildlife Site | 600 m to south-east | This site is a semi-natural community woodland managed for wildlife, including by coppicing. It supports a range of species typical of long-established woodland. |
| Promised Land Farm Meadows - Cherwell Proposed District Wildlife Site | 1.1 km to east | This site supports a grassland, with some indicator species of ancient hay meadows, with a spring fed pond, ditches and hedges. |
| Bicester Wetland Reserve Oxfordshire - Local Wildlife Site (LWS) | 1.4 km to east | This site supports wet grassland, reedbed, open water (including shallow water for waders and deeper areas for other species), wet ditches, banks with tall herb and dry grassland. It is also important for wintering wildfowl. |
| Shakespeare Drive (Kinds End Conservation Area) - Cherwell District Wildlife Site | 1.8 km to north-east | This site supports semi-improved grassland with lines of trees, and plantation woodland, with some of the grassland being wetter and supporting lowland meadow habitats. |
| Fox Covert - Cherwell Proposed District Wildlife Site | 1.8 km to the south | A semi-natural woodland with wet areas and a varied flora. |
| Wendlebury Ponds - Cherwell Proposed District Wildlife Site | 1.9 km to south | This site supports three long narrow ponds with scrub around them. These are vegetating over with one pond grading to wet woodland. |

Habitats

- 3.3 Habitats present at the Site are shown in Figure 5 and described in Table 2 below.

Table 2. Habitats present at the Site.

| Habitat | Description/notes |
|----------------------|---|
| Arable Field | The site is dominated by two large arable fields. These are of very limited ecological value and are under intensive agricultural use. This habitat does not qualify as an HPI. |
| Arable Field Margins | The majority of the arable margins were less than 1 m in width and were dominated by perennial rye grass <i>Lolium perenne</i> , cock's-foot <i>Dactylis glomerata</i> , and Yorkshire fog <i>Holcus lanatus</i> , with false oat grass |

| Habitat | Description/notes |
|--------------------------------------|---|
| | <p><i>Arrhenatherum elatius</i>, and rough meadow grass <i>Poa trivialis</i> also abundant. There were few forbs present including nettle <i>Urtica dioica</i>, white clover <i>Trifolium repens</i>, dandelion <i>Taraxacum officinale</i> agg., hogweed <i>Heracleum sphondylium</i>, creeping thistle <i>Cirsium arvense</i> and ground ivy <i>Glechoma hederacea</i>.</p> <p>The majority of the field margins are therefore of low intrinsic ecological value and are not HPis.</p> |
| Species-poor semi-improved grassland | <p>Two field margins, marked on Figure 5 along the northern and eastern margins of the western field were wider (up to 4 m) but did not appear to be directly managed for wildlife or conservation. They were slightly more diverse in terms of species and included: tufted hairgrass <i>Deschampsia cespitosa</i>, barren brome <i>Bromus sterilis</i>, wood avens <i>Geum urbanum</i>, goat's-beard <i>Tragopogon pratensis</i>, poppy <i>Papaver rhoeas</i>, ribwort plantain <i>Plantago lanceolata</i>, oxeye daisy <i>Leucanthemum vulgare</i>, greater plantain <i>Plantago major</i>, scentless mayweed <i>Tripleurospermum inodorum</i>, field forget-me-not <i>Myosotis arvensis</i>, herb robert <i>Geranium robertianum</i>, field bindweed <i>Convolvulus arvensis</i>, common field speedwell <i>Veronica persica</i>, broad-leaved dock <i>Rumex obtusifolius</i>, and field pansy <i>Viola arvensis</i>. Even though they are wider and slightly more diverse they are still not considered to meet the definition of Arable Field Margin HPI as they did not appear to be directly managed for wildlife and also do not qualify as any HPI grassland habitat type such as Lowland Meadow.</p> <p>Two areas of species-poor semi-improved grassland are also present in the eastern field. These areas are very similar in species composition and diversity as to the more diverse arable field margins identified above. These grasslands were dominated by perennial rye grass, cock's-foot, and Yorkshire fog, with false oat grass, and rough meadow grass also abundant. The forbs that were present included nettle, white clover, dandelion, hogweed, creeping thistle, ribwort plantain, greater plantain, scentless mayweed, herb robert, field bindweed, common field speedwell, and broad-leaved dock. This grassland was rough and some scrub (bramble <i>Rubus fruticosus</i>) was also present.</p> <p>This grassland type does not qualify as any grassland HPI.</p> |
| Semi-natural broad-leaved woodland | <p>There are two pockets of woodland on the Site boundaries.</p> <p>The north-east woodland parcel is a group of trees comprising sycamore <i>Acer pseudoplatanus</i>, Norway maple <i>Acer platanoides</i>, and ash <i>Fraxinus excelsior</i> with an understorey of hazel <i>Corylus avellana</i>, and hawthorn <i>Crataegus monogyna</i>. It is clearly plantation in origin with ash and sycamore as the dominant tree species. This woodland due to its origins (plantation) does not qualify as a HPI.</p> <p>The south-east woodland block is dominated by crack willow <i>Salix fragilis</i> with an understorey of blackthorn <i>Prunus spinosa</i>, field maple <i>Acer campestre</i> and hawthorn. This woodland falls under the definition of Lowland Mixed Deciduous Woodland HPI.</p> <p>A final block of woodland is immediately present off-site in the south-west corner. It is dominated by aspen <i>Populus tremula</i> and ash with an understorey of hazel and hawthorn <i>Crataegus monogyna</i>. This woodland falls under the definition of Lowland Mixed Deciduous Woodland HPI.</p> |
| Hedgerows | <p>The majority of the hedgerows around the Site were species poor (less than five native woody species per 30 m section), dominated by hawthorn and blackthorn, but elm <i>Ulmus procera</i>, field maple, bramble, dog rose <i>Rosa canina</i>, hazel and elder <i>Sambucus nigra</i> were also present. Some of the hedges had standard trees associated with them, these were predominantly sycamore, oak <i>Quercus robur</i> and ash. There was a single stretch of species rich hedgerow present on the Site (as shown on Figure 5), it was similar in species composition to the species poor sections but had over 5 species per 30 m section. The ground flora under each hedgerow was dominated by ivy, ground ivy or by the grassland of the adjacent field margin.</p> |

| Habitat | Description/notes |
|---------|--|
| | All the hedgerows on Site are considered to meet the description of the Hedgerows HPI (Maddock, 2011). |
| Ditches | A wet flowing ditch runs through the centre of the Site, between the two fields. No emergent aquatic vegetation was present as the majority of the ditch was heavily shaded by the adjacent hedgerow. This habitat type does not qualify as a HPI. Dry ditches were also present around some of the field margins- the species within these ditches was identical to the surrounding terrestrial habitats, suggesting that they remained dry for the majority of the year. This habitat type does not qualify as a HPI. |

Protected species

Bats

- 3.4 All bats and their roosts are a European Protected Species (see Appendix 1). Seven species are also SPIs.
- 3.5 TVERC returned six records of bats, including brown long-eared bat *Plecotus auritus* (one record), common pipistrelle *Pipistrellus pipistrellus* (three records), soprano pipistrelle *Pipistrellus pygmaeus* (one record) and noctule *Nyctalus noctula* (one record). This included a record of roosting brown long-eared bat to the north-east, but well off the Site.

Roosting

- 3.6 There are no buildings on the Site. There are however numerous mature trees on the Site margins and in the hedgerows, as well as in the woodland parcels which have at least some suitability for roosting bats. These have not been assessed in detail as they will be retained and protected from indirect effects.

Foraging and commuting

- 3.7 The intensively-managed arable fields which make up the great majority of the Site are likely to be of very low value for foraging bats therefore the Site overall was assessed as being of low value for foraging bats, though the parcels of woodland have suitability for foraging, as do the hedgerows.
- 3.8 Activity surveys were carried out through walked transects and static bat detectors.
- 3.9 The results of the automated detector surveys are presented in the following tables with reference to the species recorded, location and season.

Table 3 – Bat passes at Location 1 per season

| Species | Season | | | Total |
|--|--------|--------|--------|-------|
| | Spring | Summer | Autumn | |
| Common pipistrelle <i>Pipistrellus pipistrellus</i> | 50 | 3 | 8 | 61 |
| Soprano pipistrelle <i>Pipistrellus pygmaeus</i> | 30 | 1 | 14 | 45 |
| Nathusis' pipistrelle <i>Pipistrellus nathusii</i> | | | 1 | 1 |

| Species | Season | | | Total |
|--|------------|------------|-----------|------------|
| | Spring | Summer | Autumn | |
| Barbastelle <i>Barbastella</i> <i>barbastellus</i> | 1 | | 3 | 4 |
| Serotine <i>Eptesicus</i> <i>serotinus</i> | | | 1 | 1 |
| Brown long-eared bat <i>Plecotus auritus</i> | 1 | | 4 | 5 |
| <i>Myotis</i> species | 8 | | 5 | 13 |
| Leisler's bat <i>Nyctalus leisleri</i> | 3 | 34 | 16 | 53 |
| Noctule <i>Nyctalus noctula</i> | 35 | 178 | 40 | 253 |
| Grand Total | 128 | 216 | 92 | 436 |

Table 4 – Bat passes at Location 2 per season

| Species | Season | | Total |
|--|------------|------------|------------|
| | Spring | Autumn | |
| Common pipistrelle <i>Pipistrellus</i> <i>pipistrellus</i> | 88 | 88 | 176 |
| Soprano pipistrelle <i>Pipistrellus</i> <i>pygmaeus</i> | 15 | 57 | 72 |
| Pipistrelle species | | 3 | 3 |
| Barbastelle bat <i>Barbastella</i> <i>barbastellus</i> | | 14 | 14 |
| Serotine bat <i>Eptesicus</i> <i>serotinus</i> | 1 | | 1 |
| Brown long-eared bat <i>Plecotus auritus</i> | 1 | 9 | 10 |
| <i>Myotis</i> species | 5 | 82 | 87 |
| Leisler's bat <i>Nyctalus leisleri</i> | 5 | 39 | 44 |
| Noctule <i>Nyctalus noctula</i> | 36 | 115 | 151 |
| Grand Total | 151 | 407 | 558 |

- 3.12 In the data gathered from the static detectors, the species most commonly recorded was noctule bat with over 400 passes and of these 253 were at Location 1, in the north-west of the Site. The activity by this species is relatively high within the Site, which may however reflect the presence of substantial hedgerows, trees and woodland in the wider area as well as waterbodies to the north of the Site. Given the habitats within the Site itself, it is unlikely to provide a significant feeding resource, but is part of wider mosaic or the species are commuting over the Site to higher value foraging habitats in the wider area.
- 3.13 Common and soprano pipistrelle were also recorded frequently within the Site as were *Myotis* species, but the numbers for both species groups recorded were low.
- 3.14 Additionally, the walked transects recorded a very low number of passes of common species such as common pipistrelle, soprano pipistrelle, noctule, *Myotis* spp.

Badger

3.15 Badger is protected under the Protection of Badgers Act 1992 (see Appendix 1).

3.16

Hazel Dormouse

3.17 Hazel dormouse *Muscardinus avellanus* is a European Protected Species (see Appendix 1) as well as an SPI.

3.18 TVERC did not return records of hazel dormouse from within 2 km of the Site and no dormouse were recorded on the Site during the surveys.

Water vole and otter

3.19 Water voles and their burrows are fully protected under the Wildlife and Countryside Act 1981 (as amended - see Appendix 2) and are an SPI. Otter is a European protected species (see Appendix 1) and an SPI.

3.20 TVERC did not hold any records of water vole or otter. However anecdotal information provided by a local resident to BSG Ecology during the public consultation process includes the presence of otter in the drain to the south-west of the Site, though the resident has recorded the species off the Site, rather than within the Site. The drain at the southern corner of the Site rarely holds water to any extent and is mostly dry along the southern boundary of the Site. Largely this is likely to be used infrequently by otter. None of the ditches on the Site as suitable for water vole as they are heavily shaded with no marginal or aquatic vegetation.

Other mammals

3.21 TVERC also returned two records of polecat *Mustela putorius* and one of hedgehog *Erinaceus europaeus* from within 2 km of the Site, both of which are SPIs

3.22 The Site has some suitable habitat for hedgehog in the hedgerows, woodland, and grassland therefore this species may be present on the Site.

3.23 Suitable habitat for polecat is present in the form of hedgerows, woodland and grassland.

Birds - breeding

3.24 All wild birds, their nests, eggs and young are protected under the Wildlife and Countryside Act 1981 (as amended; see Appendix 1).

3.25 TVERC returned 2,395 records of birds from within 2 km of the Site, comprising 63 species. The majority (2,130 records) are from the Bicester Wetland Reserve, located approximately 1.5 km to the east.

3.26 Of the species in the records, the Site has suitability for breeding one species specially protected under schedule 1 of the Act: red kite *Milvus milvus*. However none were recorded breeding within the Site.

3.27 The hedgerows, especially those associated with wider grassland margins, and woodland are the most suitable habitats for supporting breeding birds, and this was reflected in the results of the breeding bird survey.

- 3.28 A total of 20 bird species were recorded during the bird survey as either confirmed or likely breeding on Site. These are listed in Table 5. The indicative central point of each territory or location of individual bird records is shown in Figure 6.

Table 5: Summary results of breeding bird survey

| Common / scientific name | Total pairs | Status |
|--|-------------|--------|
| Blackbird <i>Turdus merula</i> | 4 | |
| Blackcap <i>Sylvia atricapilla</i> | 5 | |
| Blue tit <i>Cyanistes caeruleus</i> | 5 | |
| Buzzard <i>Buteo buteo</i> | 1 | |
| Chiffchaff <i>Phylloscopus collybita</i> | 2 | |
| Dunnock <i>Prunella modularis</i> | 1 | SPI |
| Goldfinch <i>Carduelis carduelis</i> | 1 | |
| Great tit <i>Parus major</i> | 3 | |
| House sparrow <i>Passer domesticus</i> | 2 | SPI |
| Linnet <i>Linaria cannabina</i> | 1 | SPI |
| Magpie <i>Pica pica</i> | 1 | |
| Robin <i>Erithacus rubecula</i> | 6 | |
| Skylark <i>Alauda arvensis</i> | 2 | SPI |
| Starling <i>Sturnus vulgaris</i> | 1 | SPI |
| Song thrush <i>Turdus philomelos</i> | 3 | SPI |
| Whitethroat <i>Sylvia communis</i> | 2 | |
| Woodpigeon <i>Columba palumbus</i> | 1 | |
| Wren <i>Troglodytes troglodytes</i> | 10 | |
| Yellowhammer <i>Emberiza citrinella</i> | 1 | SPI |
| Yellow wagtail <i>Motacilla flava</i> | 1 | SPI |

- 3.29 The data presented above shows the Site supports several SPIs, including skylark (two territories) and yellow wagtail (one territory) which are ground nesting species, as well as several SPIs typical of hedgerow and woodland.

Birds-wintering

- 3.30 The Site is of very poor value for wintering birds given that it is dominated by arable land in intensive use. The Site is also very small and is representative of the wider areas, therefore is unlikely to be of high relative value.

Reptiles

- 3.31 All reptiles are fully protected under the Wildlife and Countryside Act 1981 (as amended; see Appendix 1) and all six species are also SPIs.
- 3.32 TVERC did not return any records of reptiles.
- 3.33 The grassland areas (though very small) and field margins were deemed to be suitable for reptiles but none were recorded on the Site during the surveys.

Amphibians

- 3.34 Great crested newt is a European protected species and an SPI. Common toad *Bufo bufo* is an SPI.

- 3.35 TVERC returned 34 records of great crested newt, the closest being records from 2014 from within the Bicester Golf Club, located to the north-west of the Site.
- 3.36 An analysis of aerial imagery and mapping revealed the presence of three ponds within 250 m of the Site (see Figure 3). A small, shallow depression in the woodland off site to the south (shown as Target Note 3 on Figure 5) was also present but due to its nature (shallow and seasonally wet only) this was not surveyed for great crested newt.
- 3.37 No great crested newt were recorded in the two ponds surveyed directly (Ponds 1 and 2 shown as Target Notes 1 and 2 respectively on Figure 5) either with tradition techniques over two visits or eDNA analysis. Pond 3 was found to be dry by the second visit to the area, therefore it is unlikely to able to support a newt population and works as a periodically inundated attenuation basin only.
- 3.38 It is therefore unlikely that the Site supports great crested newt.

Invertebrates

- 3.39 TVERC returned six records of invertebrates from within 2 km of the Site.
- 3.40 The Site generally offers poor or very poor habitat for invertebrates due to the intensive management of the arable land, and the majority of habitats are unlikely to support any notable populations or assemblages of invertebrates. The more mature woodland areas and hedgerows on the field boundary features may support some notable species, but are unlikely to support significant assemblages of species.

4 Impacts and recommendations

Designated Sites

- 4.1 No direct impacts to designated site will occur, as none are present on or adjacent to the Site.
- 4.2 The off site designated sites are located a minimum of 600 m away and no direct linkage to these is being provided. Bowler's Copse, the closest site, is located on the opposite side of the A41. Therefore indirect impacts as a result of visitor pressure are highly unlikely. The Bicester Wetland Reserve is open to visitors, but access is managed in order to prevent damaging its interest, therefore, the albeit likely small increase in visitors to this site from the proposed development is highly unlikely to result in indirect adverse effects.

Habitats

- 4.3 The majority of the Site supports habitats of low intrinsic value. Therefore their loss is considered of negligible value. The hedgerows are largely being retained with the exception of a new access between the two fields.
- 4.4 The proposals for the Site will also include large areas of mixed scrub, new meadows, attenuation basins seeded with appropriate grass mixes and two community woodlands. These have been located in order to maximise connectivity with existing off site habitats, such as the southern boundary of the western field. The details of the habitat creation and management will be set out in a Landscape and Ecology Management Plan (LEMP) or similar document.
- 4.5 The Biodiversity Impact assessment based on the proposed Green Infrastructure Plan and likely layout of the residential development within this supports the conclusion that overall this scheme will result in a gain for biodiversity. The metric applied to the Site (summary included as Appendix 2 and full metric provided separately) shows that there will be a gain of 6.56 Biodiversity Units (BU) for habitat and 1.72 BU for hedgerows, equivalent to an uplift of 20.68% for Habitats and 54.84% for hedgerows. For Rivers (as defined in the metric, including ditches), no gain will occur but also no losses. The existing ditches will be retained, with the exception of a small loss to a culvert, resulting in a loss to ditches of 0.37%. However a new drainage features is being created, but as this is included in the area habitats, this does not also count towards creating a new drain. If this is considered, given the poor quality of the ditched being culverted, there is likely to be a gain for these habitat types overall.

Protected Species

- 4.6 The Site supports very limited protected species with no reptiles, great crested newt or dormouse recorded. Impacts to these species are therefore not considered further, though the new habitat creation may have a benefit for them by providing habitat to be colonised at a later date.
- 4.7 The following impacts are considered and mitigation proposed. Mitigation to be implemented during the construction stage will be detailed in a Construction Environmental Management Plan: Biodiversity, or similar document.

Breeding birds

- 4.8 Nesting birds have found to be present, both in the hedgerows and arable fields. This included some species typical of farmland habitats such as skylark and yellow wagtail. The proposed development will result in the loss of two skylark and one yellow wagtail territory, both of which are SPIs. However the proposals for the Site include extensive habitat creation which will benefit a range of other breeding birds, including SPIs such as linnets, yellowhammers and bullfinches. The proposals will also include a range of integrated nest boxes for SPIs, such as house sparrow and swift. Overall therefore it is considered that the proposals will deliver a benefit for several SPIs.
- 4.9 There is a risk in the absence of mitigation that nesting bird habitat removal during the nesting bird season may result in accidental damage or destruction of bird nests. This includes the clearance of

hedgerows, tree surgery or clearance of former arable land. As such all vegetation cutting will be carried out in the winter (e.g. between October and February inclusive). Arable land should be ploughed or graded outside the nesting bird season and maintained bare until the construction work commences. These measures will be detailed in the CEMP: Biodiversity.

Bats

- 4.10 The Site offers very limited suitability habitat for foraging bats, and some suitable features in either off site or retained boundary features.
- 4.11 No roosting features will be lost as a result of the development.
- 4.12 The habitat losses a result of the development will be largely limited to arable land, which is likely to result in a negligible impact on foraging bats.
- 4.13 The proposals for the Site in terms of habitat creation will overall result in an increase in the site's value as a foraging resource for bats, such as mixed scrub and meadows.
- 4.14 In order to avoid indirect effects on bats, the lighting strategy will be designed in order to avoid impacting the retained on site and off site linear features, or newly created habitats. This will be designed with relevant guidance in mind, such as
- BCT and ILP (2018). Guidance Note 08/18 - Bats and artificial lighting in the UK. Bats and the Built Environment series.
- 4.15 These measures will be detailed in the CEMP: Biodiversity for temporary construction lighting and in the Design Code for the permanent lighting of the development.

Other Species

- 4.16 A range of other species will also benefit from the proposals for the Site such as hedgehog and polecat, with both species using scrub and grassland habitats. Hedgehogs would additionally benefit from a sympathetic design of the boundary features. As such, each garden wall or fence will include a hedgehog passing point to allow access for the species, ensuring the gardens become permeable for the species. As a minimum, the gaps will be 13 x 13 cm squares or the lowest part of the fences will be 10 cm from the ground (i.e. no gravel board installed).

5 References

- BCT and ILP (2018). *Guidance Note 08/18 - Bats and artificial lighting in the UK. Bats and the Built Environment series.*
- Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, RA., Foster, J., Wilkinson, J., Arnett, A., Williams, P., and Dunn, F. (2014). *Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA.* Freshwater Habitats Trust, Oxford.
- Bright, P.W, Morris, P.A. and Mitchell-Jones, T. (2006). *The Dormouse Conservation Handbook Second Edition.* English Nature, Peterborough.
- Collins, J. (ed.) 2016. *Bat surveys for professional ecologists: Good practice guidelines.* The Bat Conservation Trust, London
- DEFRA (2021). *MAGIC: Multi-agency Geographic Information for the Countryside.* [online]. <https://magic.defra.gov.uk/MagicMap.aspx>.
- Froglife (1999). *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife advice sheet 10.* Froglife, Halesworth.
- Harris, S., Cresswell, P. and Jeffries, D. (1989). *Surveying Badgers. Occasional publication of Mammal Society, number 9.* Mammal Society.
- JNCC (2010). *Handbook for Phase One Habitat Survey* [online] <http://jncc.defra.gov.uk/page-2468>
- Maddock, A. (ed) (2011). *UK Biodiversity Action Plan Priority Habitat Descriptions (updated Dec. 2011).* Joint Nature Conservation Committee, Peterborough. [online] <https://hub.jncc.gov.uk/assets/2728792c-c8c6-4b8c-9ccd-a908cb0f1432>
- Natural England and Defra (2015). *Guidance. Reptiles: surveys and mitigation for development projects.* Natural England and Department for Environment, Food & Rural Affairs, Worcester.
- Natural England (2021). *Designated Sites View. Now modified but in use at the time of the surveys undertaken.*
- Neal, E., and Cheeseman, C.L. (1996). *Badgers.* T & AD Poyser Natural History Ltd, London
- Sewell D, Griffiths RA, Beebee TJC, Foster J and Wilkinson JW (2013). *Survey protocols for the British herpetofauna.*
- Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds* 114: 723-747.

6 Figures

Figure 1. Site boundary and location of designated sites

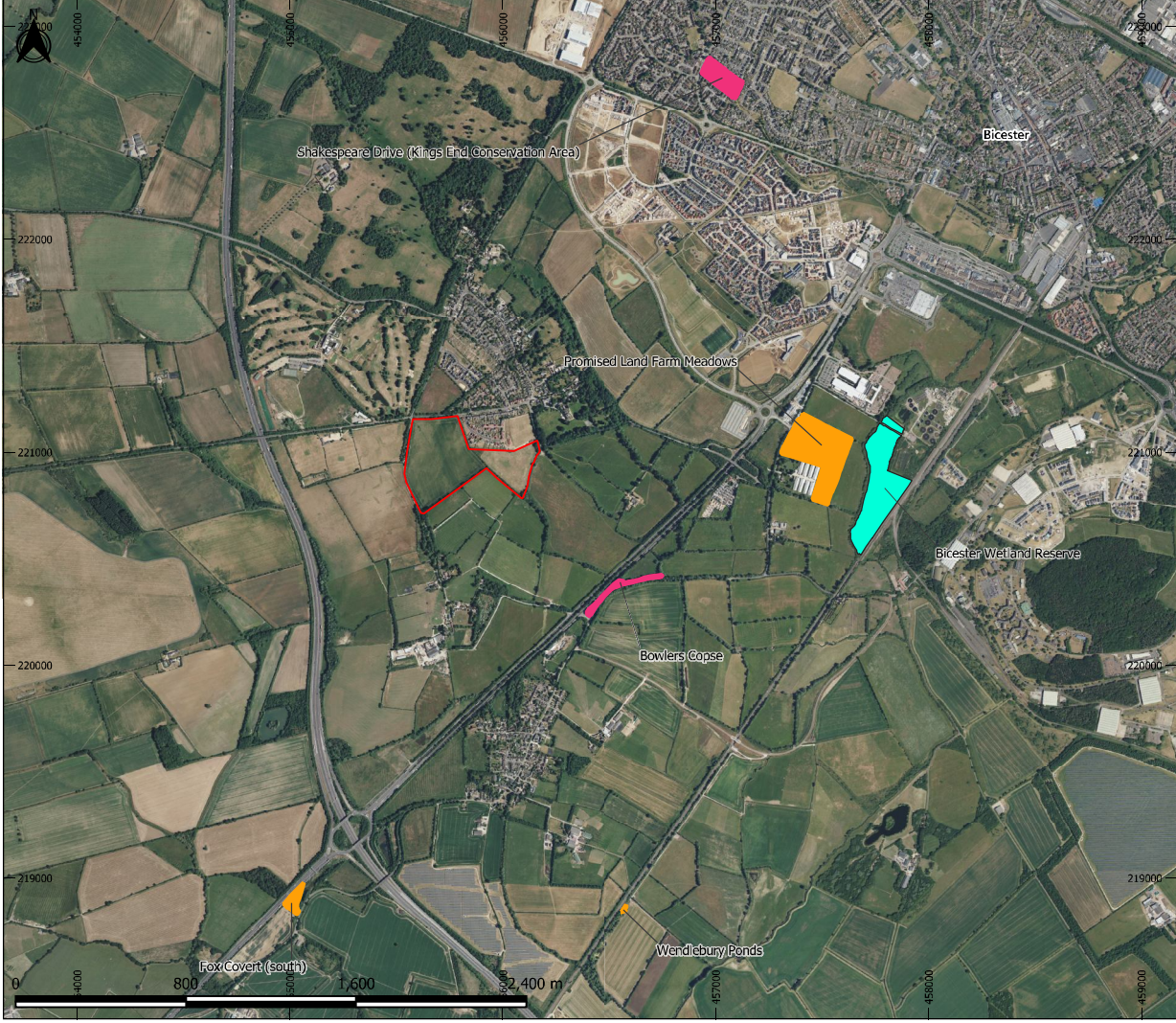
Figure 2. Bat survey transect and detector locations

Figure 3. Ponds identified within 250 m.

Figure 4. Reptile survey areas

Figure 5: Phase 1 habitat survey.

Figure 6. Breeding bird indicative territory map.



- Legend
- Cherwell District Wildlife Site
 - Oxfordshire Local Wildlife Site
 - Proposed Cherwell District Wildlife Site
 - Site boundary

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PROJECT TITLE
 LAND SOUTH OF GREEN LANE

DRAWING TITLE
 Figure 1: Site location and designated sites

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 Sources: BSG Ecology survey data



- Legend
- Static Point
 - - - Survey transect
 - Site boundary

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PROJECT TITLE
 LAND SOUTH OF GREEN LANE

DRAWING TITLE
 Figure 2: Bat Surveys - Static detected locations and transect route

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- Legend
- Ponds
 - Site boundary
 - 250m from site boundary

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PROJECT TITLE
 LAND SOUTH OF GREEN LANE

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 Figure 3: Ponds within 250 m

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- Legend
- Reptile mats
 - Site boundary

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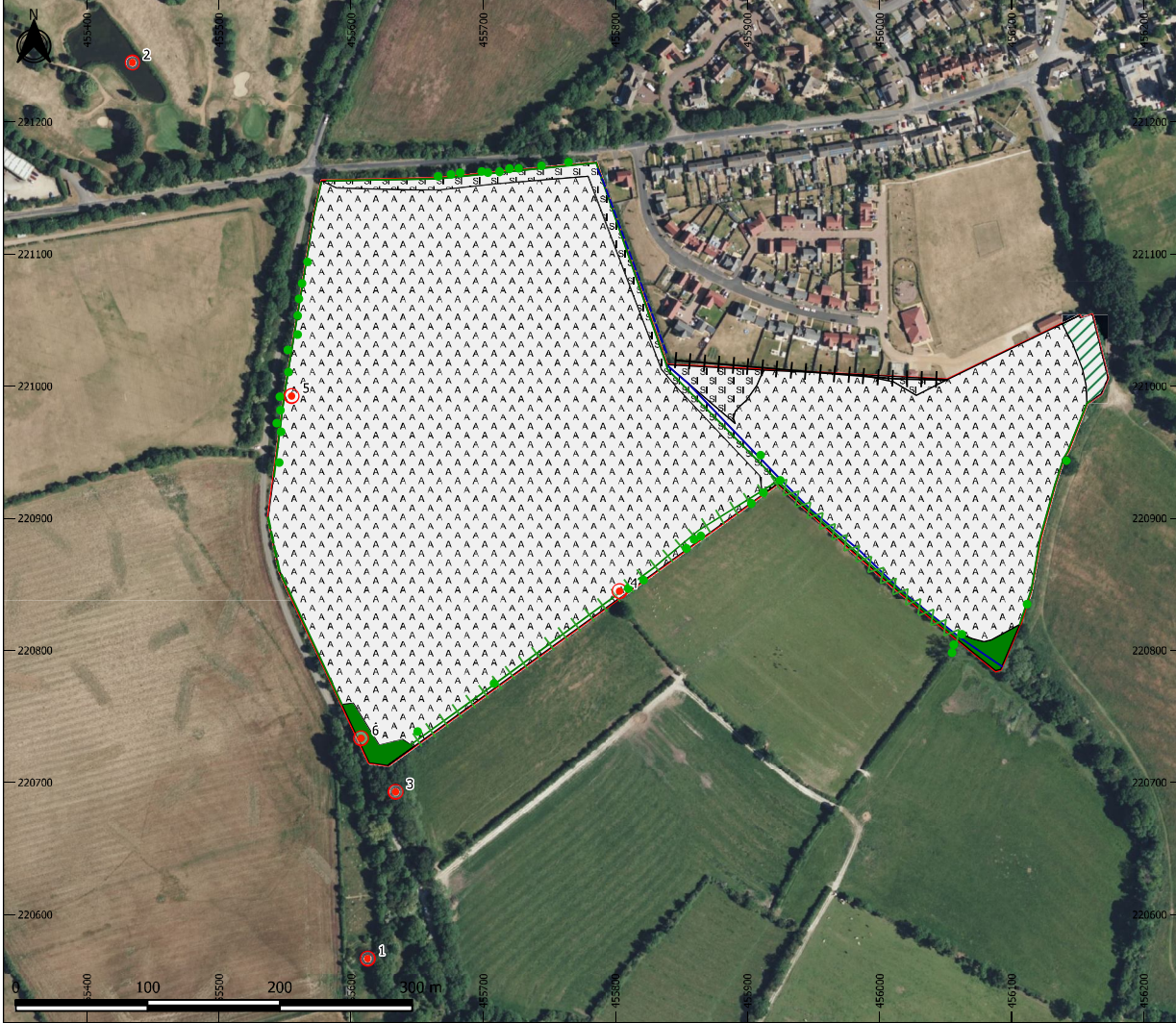
PROJECT TITLE
LAND SOUTH OF GREEN LANE

DRAWING TITLE
Figure 4: Reptile Survey Areas

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- Legend
- TN
 - Tree
 - ▲▲ Intact hedge - native species-rich
 - Intact hedge - species-poor
 - - - Defunct hedge - species-poor
 - + Hedge with trees - species-poor
 - + Fence
 - - - Dry ditch
 - Running water
 - Broadleaved woodland - semi-natural
 - ▨ Broadleaved woodland - plantation
 - Poor semi-improved grassland
 - ▲ Cultivated/disturbed land - arable
 - Site boundary

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PROJECT TITLE
 LAND SOUTH OF GREEN LANE

DRAWING TITLE
 Figure 5: Phase 1 Survey Map

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Appendix 1: Summaries of Relevant Policy, Legislation and Other Instruments

This section briefly summarises the legislation, policy and related issues that are relevant to the main text of the report. The following text does not constitute legal or planning advice.

National Planning Policy Framework (England)

The Government issued the National Planning Policy Framework (NPPF) in July 2021. Text excerpts from the NPPF are shown where they may be relevant to planning applications and biodiversity including protected sites, habitats and species.

The Government sets out the three objectives for sustainable development (economy, social and environmental) at paragraphs 8-10 to be delivered through the plan preparation and implementation level and 'are not criteria against which every decision can or should be judged' (paragraph 9). The planning system's environmental objective is 'to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity...' (paragraph 8c).

In conserving and enhancing the natural environment, the NPPF (Paragraph 174) states that 'planning policies and decisions should contribute to and enhance the natural and local environment' by:

- Protecting and enhancing...sites of biodiversity value... '(in a manner commensurate with their statutory status or identified quality in the development plan)'.
- Recognising the wider benefits from natural capital and ecosystem services including trees and woodland.
- Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability.

In respect of protected sites, at paragraph 175, the NPPF requires local planning authorities to distinguish, at the plan level, '...between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value...take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.' A footnote to paragraph 175 refers to the preferred use of agricultural land of poorer quality if significant development of agricultural land is to take place.

Paragraph 179 refers to how plans should aim to protect and enhance biodiversity. Plans should: 'identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity [a footnote refers to ODPM Circular 06/2005 for further guidance in respect of statutory obligations for biodiversity in the planning system], wildlife corridors and stepping stones that connect them and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;' and to 'promote the conservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.'

Paragraph 180 advises that, when determining planning applications, '...local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments) should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of

special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

- development resulting in the loss or deterioration of irreplaceable habitats, (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.’

In paragraph 181, the following should be given the same protection as habitats sites:

- potential Special Protection Areas and possible Special Areas of Conservation;
- listed or proposed Ramsar sites; and
- sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.’

In paragraph 182 the NPPF refers back to sustainable development in relation to appropriate assessment and states: ‘the presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site’.

In paragraph 183, the NPPF refers to planning policies and decisions taking account of ground conditions and risks arising from land instability and contamination at sites. In relation to risks associated with land remediation account is to be taken of ‘potential impacts on the natural environment’ that arise from land remediation.

In paragraph 185 the NPPF states that planning policies and decisions should ensure that development is appropriate to the location and take into account likely effects (including cumulative) on the natural environment and, in doing so, they ‘should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation’ (paragraph 185c).

Government Circular ODPM 06/2005 Biodiversity and Geological Conservation (England only)

Paragraph 98 of Government Circular 06/2005 advises that “the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult Natural England before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species’ protection provisions affecting the site concerned...”

Paragraph 99 of Government Circular 06/2005² advises that “it is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted”.

Standing Advice (GOV.UK - England only)

The GOV.UK website provides information regarding protected species and sites in relation to development proposals: ‘Local planning authorities should take advice from Natural England or the Environment Agency

² ODPM Circular 06/2005. *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System* (2005). HMSO Norwich.

about planning applications for developments that may affect protected species.' GOV.UK advises that 'some species have standing advice which you can use to help with planning decisions. For others you should contact Natural England or the Environment Agency for an individual response.'

The standing advice (originally from Natural England and now held and updated on GOV.UK³) provides advice to planners on deciding if there is a 'reasonable likelihood' of protected species being present. It also provides advice on survey and mitigation requirements.

When determining an application for development that is covered by standing advice, in accordance with guidance in Government Circular 06/2005, Local planning authorities are required to take the standing advice into account. In paragraph 82 of the aforementioned Circular, it is stated that: 'The standing advice will be a material consideration in the determination of the planning application in the same way as any advice received from a statutory consultee...it is up to the planning authority to decide the weight to be attached to the standing advice, in the same way as it would decide the weight to be attached to a response from a statutory consultee.'

Natural Environment and Rural Communities (NERC) Act 2006 – Habitats and species of principal importance (England)

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act require the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list has been drawn up in consultation with Natural England as required by the Act. In accordance with the Act the Secretary of State keeps this list under review and will publish a revised list if necessary, in consultation with Natural England.

The S41 list is used to guide decision-makers such as public bodies, including local authorities and utilities companies, in implementing their duty under Section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions, including development control and planning. This is commonly referred to as the 'Biodiversity Duty.'

Guidance for public authorities on implementing the Biodiversity Duty⁴ has been published by Defra. One of the key messages in this document is that 'conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them.' In England the administration of the planning system and licensing schemes are highlighted as having a 'profound influence on biodiversity conservation.' Local authorities are required to take measures to "promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species. The guidance states that 'the duty aims to raise the profile and visibility of biodiversity, clarify existing commitments with regard to biodiversity, and to make it a natural and integral part of policy and decision making.'

In 2007, the UK Biodiversity Action Plan (BAP) Partnership published an updated list of priority UK species and habitats covering terrestrial, freshwater and marine biodiversity to focus conservation action for rarer species and habitats in the UK. The UK Post-2010 Biodiversity Framework⁵, which covers the period from 2011 to 2020, now succeeds the UK BAP. The UK priority list contained 1150 species and 65 habitats requiring special protection and has been used as a reference to draw up the lists of species and habitats of principal importance in England.

In England, there are 56 habitats of principal importance and 943 species of principal importance on the S41 list. These are all the habitats and species found in England that were identified as requiring action in the UK BAP and which continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework.

European protected species (Animals)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates various amendments that have been made to the original (1994) Regulations which transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.

"European protected species" (EPS) of animal are those which are shown on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 43

³ <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications#standing-advice-for-protected-species>

⁴ Defra, 2007. *Guidance for Public Authorities on Implementing The Biodiversity Duty*. (<http://www.defra.gov.uk/publications/files/pb12585-pa-guid-english-070516.pdf>)

⁵ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). 2012. *UK Post-2010 Biodiversity Framework*. July 2012. (<http://jncc.defra.gov.uk/page-6189>)

of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

- a. Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
- b. Possess or control any live or dead specimens or any part of, or anything derived from a these species
- c. deliberately disturb wild animals of any such species
- d. deliberately take or destroy the eggs of such an animal, or
- e. intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place

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

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

Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works and by Natural Resources Wales in Wales. In accordance with the requirements of the Regulations (2017, as amended), a licence can only be issued where the following requirements are satisfied:

- a. The proposal is necessary ‘to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’
- b. ‘There is no satisfactory alternative’
- c. The proposals ‘will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.’

Definition of breeding sites and resting places

Guidance for all European Protected Species of animal, including bats and great crested newt, regarding the definition of breeding and of breeding and resting places is provided by The European Council (EC) which has prepared specific guidance in respect of the interpretation of various Articles of the EC Habitats Directive.⁶ Section II.3.4.b) provides definitions and examples of both breeding and resting places at paragraphs 57 and 59 respectively. This guidance states that ‘The provision in Article 12(1)(d) [of the EC Habitats Directive] should therefore be understood as aiming to safeguard the ecological functionality of breeding sites and resting places.’ Further the guidance states: ‘It thus follows from Article 12(1)(d) that such breeding sites and resting places also need to be protected when they are not being used, but where there is a reasonably high probability that the species concerned will return to these sites and places. If for example a certain cave is used every year by a number of bats for hibernation (because the species has the habit of returning to the same winter roost every year), the functionality of this cave as a hibernating site should be protected in summer as well so that the bats can re-use it in winter. On the other hand, if a certain cave is used only occasionally for breeding or resting purposes, it is very likely that the site does not qualify as a breeding site or resting place.’

Competent authorities

Under Regulation 7 of the Conservation of Habitats and Species Regulations 2017 (as amended) a “competent authority” includes “any Minister of the Crown..., government department, statutory undertaker, public body of any description or person holding a public office.

⁶ Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. (February 2007), EC.

In accordance with Regulation 9, “a competent authority must exercise their functions which are relevant to nature conservation, including marine conservation, so as to secure compliance with the requirements of the [Habitats and Birds] Directives. This means for instance that when considering development proposals a competent authority should consider whether EPS or European Protected Sites are to be affected by those works and, if so, must show that they have given consideration as to whether derogation requirements can be met.

Birds

All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

The Conservation of Habitats and Species Regulations 2017 (as amended) places duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of wild birds (2009/147/EC, ‘Birds Directive’⁷) (Regulation 10 (3)) requires that the objective is the ‘preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive...’ Regulation 10 (7) states: ‘In considering which measures may be appropriate for the purpose of security or contributing to the objective in [Regulation 10 (3)] Paragraph 3, appropriate account must be taken of economic and recreational requirements’.

In relation to the duties placed on competent authorities under the 2017 Regulations, Regulation 10 (8) states: ‘So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).’

Badger

Badger is protected under the Protection of Badgers Act 1992. It is not permitted to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. A badger sett is defined in the legislation as “a structure or place, which displays signs indicating current use by a badger”.

ODPM Circular 06/2005⁸ provides further guidance on statutory obligations towards badger within the planning system. Of particular note is paragraph 124, which states that “The likelihood of disturbing a badger sett, or adversely affecting badgers’ foraging territory, or links between them, or significantly increasing the likelihood of road or rail casualties amongst badger populations, are capable of being material considerations in planning decisions.”

Natural England provides Standing Advice⁹, which is capable of being a material consideration in planning decisions. Natural England recommends mitigation to avoid impacts on badger setts, which includes maintaining or creating new foraging areas and maintaining or creating access (commuting routes) between setts and foraging/watering areas.

Reptiles

All native reptile species receive legal protection in Great Britain under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Viviparous lizard, slow-worm, grass snake and adder are protected against killing, injuring and unlicensed trade only. Sand lizard and smooth snake receive additional protection as “European Protected species” under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) and are fully protected under the Wildlife and Countryside Act 1981 (as amended).

⁷ 2009/147/EC Birds Directive (30 November 2009. European Parliament and the Council of the European Union.

⁸ ODPM Circular 06/2005. *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System* (2005). HMSO Norwich.

⁹ <http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/standingadvice/specieslinks.aspx>

All six native species of reptile are included as 'species of principal importance' for the purpose of conserving biodiversity under Section 41 (England) of the NERC Act 2006 and Section 7 of the Environment (Wales) Act 2016.

Current Natural England Guidelines for Developers¹⁰ states that 'where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.' Further the guidance states: 'Normally prohibited activities may not be illegal if 'the act was the incidental result of a lawful operation and could not reasonably have been avoided'. Natural England 'would expect reasonable avoidance to include measures such as altering development layouts to avoid key areas, as well as capture and exclusion of reptiles.'

The Natural England Guidelines for Developers state that 'planning must incorporate two aims where reptiles are present:

- To protect reptiles from any harm that might arise during development work;
- To ensure that sufficient quality, quantity and connectivity of habitat is provided to accommodate the reptile population, either on-site or at an alternative site, with no net loss of local reptile conservation status.

Water vole

Water vole is protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to kill, injure or take any water vole, damage, destroy or obstruct access to any place of shelter or protection that the animals are using, or disturb voles while they are using such a place. Water vole is listed as a Species of Principal Importance under the provisions of the NERC Act 2006 in England and under the provisions of the Environment (Wales) Act 2016.

Wild mammals in general

The Wild Mammals (Protection) Act 1996 (as amended) makes provision for the protection of wild mammals from certain cruel acts, making it an offence for any person to intentionally cause suffering to any wild mammal. In the context of development sites, for example, this may apply to rabbits in their burrows

Invasive non-native species

An invasive non-native species is any non-native animal or plant that has the ability to spread causing damage to the environment.

Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to release, or to allow to escape into the wild, any animal which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state or is listed under Schedule 9 of the Act.

It is an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Hedgerows

Article 10 of the Habitats Directive¹¹ requires that 'Member States shall endeavour...to encourage the management of features of the landscape which are of major importance for wild fauna and flora. Such features are those which, by virtue of their linear and continuous structure...or their function as stepping stones...are essential for the migration, dispersal and genetic exchange of wild species'. Examples given in the Directive include traditional field boundary systems (such as hedgerows).

The aim of the Hedgerow Regulations 1997¹², according to guidance produced by the Department of the Environment¹³, is "to protect important hedgerows in the countryside by controlling their removal through a system of notification. In summary, the guidance states that the system is concerned with the removal of hedgerows, either in whole or in part, and covers any act which results in the destruction of a hedgerow. The

¹⁰ English Nature, 2004. *Reptiles: guidelines for developers*. English Nature, Peterborough. <https://webarchive.nationalarchives.gov.uk/20150303064706/http://publications.naturalengland.org.uk/publication/76006>

¹¹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

¹² Statutory Instrument 1997 No. 1160 – The Hedgerow Regulations 1997. HMSO: London

¹³ The Hedgerow Regulations 1997: a guide to the law and good practice, HMSO: London

procedure in the Regulations is triggered only when land managers or utility operators want to remove a hedgerow. The system is in favour of protecting and retaining 'important' hedgerows.

The Hedgerow Regulations set out criteria that must be used by the local planning authority in determining which hedgerows are 'important'. The criteria relate to the value of hedgerows from an archaeological, historical, wildlife and landscape perspective.

Appendix 2: BIA metric summary

| | | |
|--|-----------------------|--------|
| On-site baseline | <i>Habitat units</i> | 31.72 |
| | <i>Hedgerow units</i> | 3.14 |
| | <i>River units</i> | 1.49 |
| On-site post-intervention (Including habitat retention, creation & enhancement) | <i>Habitat units</i> | 38.28 |
| | <i>Hedgerow units</i> | 4.87 |
| | <i>River units</i> | 1.48 |
| On-site net % change (Including habitat retention, creation & enhancement) | <i>Habitat units</i> | 20.68% |
| | <i>Hedgerow units</i> | 54.84% |
| | <i>River units</i> | -0.37% |
| Off-site baseline | <i>Habitat units</i> | 0.00 |
| | <i>Hedgerow units</i> | 0.00 |
| | <i>River units</i> | 0.00 |
| Off-site post-intervention (Including habitat retention, creation & enhancement) | <i>Habitat units</i> | 0.00 |
| | <i>Hedgerow units</i> | 0.00 |
| | <i>River units</i> | 0.00 |
| Total net unit change (including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i> | 6.56 |
| | <i>Hedgerow units</i> | 1.72 |
| | <i>River units</i> | -0.01 |
| Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement) | <i>Habitat units</i> | 20.68% |
| | <i>Hedgerow units</i> | 54.84% |
| | <i>River units</i> | -0.37% |
| Trading rules Satisfied? | Yes ✓ | |