

**APPENDIX 10.1
ASPECT ECOLOGY'S REPORT ENTITLED 'LAND AT NORTH WEST
BICESTER. PRELIMINARY BASELINE ECOLOGICAL APPRAISAL'
DATED APRIL 2020**

Land at North West Bicester

**Preliminary Baseline Ecological
Appraisal**

April 2021

| Quality Management | |
|------------------------|--|
| Client: | Firethorn Developments Ltd. |
| Project: | North West Bicester |
| Report Title: | Preliminary Baseline Ecological Appraisal |
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1 Introduction

1.1 Background & Proposals

1.1.1 Aspect Ecology has been commissioned by Firethorn Developments Ltd. to undertake a Baseline Ecological Appraisal in respect of proposed development of land at North West Bicester centred at grid reference SP 575 252 (see Plan 5903/ECO1).

1.1.2 The Site is proposed for development of a new neighbourhood of up to 550 homes, associated access and landscaping. The Site itself sits within a wider allocated site as set out within the North West Bicester Supplementary Planning Document¹. A large proportion of the Site and the wider allocation was also subject to a resolution to grant planning permission in 2015 for the provision of 2,600 residential units, an energy centre, two primary schools and an extension to the Exemplar Development Primary School. An alternative planning application was also previously submitted for a parcel of the Site for the provision of 75 residential homes.

1.2 Site Overview

1.2.1 The Site is located to the north west of Bicester, Oxfordshire, south west of the B4100. The Site is bound to the north-west by arable land and to the south-west by a watercourse, beyond which lies further agricultural land. The B4100 bounds a portion of the north-eastern boundary of the Site whilst the Bicester Exemplar Scheme, comprising residential dwellings and active construction areas bound the remaining north-eastern boundary and south-eastern boundary.

1.2.2 The Site itself is approximately 22ha in size, divided into two parcels and comprises a number of grassland fields and arable land, intersected and bound by hedgerows. A number of small areas of scrub and woodland are also present, whilst a watercourse flows off-site adjacent to the southern and eastern boundaries.

1.3 Purpose of the Report

1.3.1 This report documents the methods and findings of the baseline ecology surveys undertaken to date and the desktop study carried out in order to establish the existing ecological interest of the Site and to evaluate the importance of the habitats and species present. Where appropriate, reference is also made to priority habitats and species and local Biodiversity Action Plans (BAPs). The important ecological features of the Site are identified to inform an Environmental Impact Assessment.

¹ Cherwell District Council (November 2015) 'North West Bicester Supplementary Planning Document'

2 Methodology

2.1 Desktop Study

- 2.1.1 In order to compile background information on the Site and its immediate surroundings Thames Valley Environmental Records Centre (TVERC) has been contacted, with data requested on the basis of a search radius of 2km from the Site. Information on statutory designations has been obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England.
- 2.1.2 In addition, the Woodland Trust database has been searched for any records of veteran trees within or adjacent to the Site.
- 2.1.3 Where information has been received from the above organisations this is reproduced at Appendix 5903/1 and on Plan 5903/ECO2, where appropriate.

2.2 Habitat Survey

- 2.2.1 The Site was originally surveyed by Aspect Ecology in May 2020 in order to ascertain the general ecological value of the land contained within the boundaries of the Site and to identify the main habitats and ecological features present.
- 2.2.2 The Site was surveyed based on standard Phase 1 Habitat Survey methodology², whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal³ to record details on the actual or potential presence of any notable or protected species or habitats.
- 2.2.3 Using the above method, the Site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist⁴.

2.3 Faunal Surveys

- 2.3.1 General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species. Specific survey work was carried out for bats, Badger *Meles meles*, Otter *Lutra lutra*, Water Vole *Arvicola amphibius*, breeding birds, reptiles, Great Crested Newts *Triturus cristatus* and Brown Hairstreak *Thecla betulae* butterfly as described below.

² Joint Nature Conservation Committee (2010) 'Handbook for Phase 1 habitat survey: A technique for environmental audit.'

³ Chartered Institute for Ecology and Environmental Management (CIEEM) (2013) 'Guidelines for Preliminary Ecological Appraisal.'

⁴ <http://bsbi.org/resources>

Bats^{5,6}

Visual Inspection Surveys

2.3.2 **Trees.** Trees were assessed for their potential to support roosting bats based on the presence of features such as holes, cracks, splits or loose bark. The risk category for roosting bats for each tree was rated based on relevant guidance from BS 8596:2015⁷ as either:

- Known or Confirmed Roost;
- High/medium Risk;
- Low Risk; or
- Negligible/no Risk.

2.3.3 Any potential roost features identified were also inspected for any signs indicating possible use by bats, e.g. staining, scratch marks, bat droppings, etc.

2.3.4 No buildings are present within the Site.

Activity Surveys

2.3.5 Manual walked transect surveys were undertaken in August and September 2020 to ascertain the level of usage of the Site by foraging or commuting bats. This survey method involves walking a planned transect route with key listening points, specifically covering habitats/features with particular potential for commuting or foraging bats. Hand-held electronic detectors were employed together with recorders to aid identification of any bats observed. The transect was walked from sunset, for at least 2 hours, with a 5 minute stop at each listening point. The transect route is shown on Plan 5903/ECO4. A third survey is proposed for Spring 2021 which will be undertaken 2 hours prior to sunrise.

2.3.6 This survey work was carried out during suitable weather conditions, as set out in Table 2.1 below.

Table 2.1. Manual walked transect survey details.

| Date | Start & end times & time of sunset/rise | Equipment used | Weather |
|--------------------|---|-----------------|---|
| 06/08/2020 Dusk | Start time: 20.44 End time: 22.59 Sunset: 20.44 | Anabat Scout | Dry, 5% cloud cover, BF0, 18-21°C |
| 22/09/2020 Dusk | Start time: 19.05 End time: 21.28 Sunset: 19.02 | Anabat Scout | Occasional light showers, 100% cloud, BF2, 18°C |

BF0 = calm, BF12 = hurricane force

2.3.7 Automated static detector surveys were also carried out during which Song Meter 4 (SM4) detectors were positioned at two locations within the Site from the 6th to 13th August 2020 to record any bat activity. The two SM4 detectors were deployed in the same locations between the 22nd and 29th September 2020. Locations of where static detectors were deployed is shown on Plan 5903/ECO4. The detectors were set to

⁵ Based on: English Nature (2004) 'Bat Mitigation Guidelines'

⁶ Bat Conservation Trust (2016) 'Bat Surveys for Professional Ecologists''

⁷ Based on: British Standard 8596:2015: Surveying for Bats in Trees and Woodland – Guide

switch on approximately 30 minutes before sunset and switch off approximately 30 minutes after sunrise. The weather conditions recorded during the static detector deployments are provided in Table 2.2 below.

Table 2.2. Automated detector survey details.

| Deployment Date | Weather Conditions | | | |
|-----------------|--------------------|----------|-----------------|---------------|
| | Wind (BF) | Temp(°C) | Cloud Cover (%) | Precipitation |
| 06/08/2020 | 0 | 21 | 5 | Dry |
| 07/08/2020 | 4 | 25 | 25 | Dry |
| 08/08/2020 | 5 | 22 | 25 | Dry |
| 09/08/2020 | 5 | 20 | 50 | Dry |
| 10/08/2020 | 5 | 24 | 25 | Dry |
| 11/08/2020 | 4 | 26 | 25 | Dry |
| 12/08/2020 | 5 | 25 | 25 | Dry |
| 13/08/2020 | 5 | 17 | 100 | Dry |
| 22/09/2020 | 2 | 18 | 100 | Showers |
| 23/09/2020 | 6 | 14 | 100 | Dry |
| 24/09/2020 | 6 | 10 | 75 | Showers |
| 25/09/2020 | 7 | 10 | 50 | Dry |
| 26/09/2020 | 7 | 9 | 50 | Dry |
| 27/09/2020 | 7 | 11 | 50 | Dry |
| 28/09/2020 | 5 | 12 | 25 | Dry |
| 29/09/2020 | 5 | 14 | 75 | Showers |

Analysis of Bat Survey Recordings

2.3.8 All bat calls were analysed to verify the species recorded during the survey work. Where recordings could not be reliably attributed to species (such as for *Myotis* species) or where overlaps between otherwise distinguishable species occur (such as in Pipistrelle bat calls around 40kHz or 50kHz) calls were identified to genus level; in the case of calls which could not be distinguished between *Nyctalus* sp. and Serotine, these have been labelled as 'unidentified big bat' species.

Badger⁸

2.3.9 The Site was searched thoroughly for evidence of Badger activity in May 2020, in order to build a picture of the use of the Site by Badger by recording the following:

- Badger setts (either active or disused);
- Well-worn paths and push-throughs;
- Snagged hair;
- Footprints;
- Latrines; and
- Foraging signs.

⁸ Based on: Mammal Society (1989) 'Occasional Publication No. 9 – Surveying Badgers'

Otter⁹ and Water Vole¹⁰

- 2.3.10 The watercourses adjacent to the Site were thoroughly searched for signs of Otter and Water Vole in June and September 2020. Otter field signs include holts (underground chambers used for lying up), spraints, prints, paths and slides. Water Vole signs include latrines, tunnels, lawns (small areas of vegetation grazed by Water Vole) and footprints. The banks of the watercourses were examined thoroughly from both sides (where accessible) and from the watercourse itself where scrub and water depth allowed.

Breeding Birds¹¹

- 2.3.11 The use of the Site by breeding birds was assessed in June 2020 and April 2021. Birds present within the Site were recorded using a method modified from the British Trust for Ornithology's (BTO's) Common Bird Census technique.
- 2.3.12 This involved walking a route over the Site and recording all 'registrations' of birds either seen or heard. The sightings or 'registrations' were recorded on a plan using standard BTO codes for each bird species and appropriate abbreviations.
- 2.3.13 This survey methodology has the advantage over other survey methods of mapping each registration to a specific point and this therefore illustrates those areas containing the highest density and diversity of bird species.
- 2.3.14 One further survey visit is proposed for May 2021, once all surveys are complete, territory numbers and distribution for each species can be determined.

Reptiles¹²

- 2.3.15 Given the presence of potentially suitable reptile habitat within the Site, specific surveys were undertaken to establish the presence/absence of common reptile species in September 2020.
- 2.3.16 A total of 258 50x50cm sheets of thick roofing felt were placed within suitable areas across the Site to act as artificial refugia. This represents a suitable density of over 10 refugia per hectare of suitable habitat. The refugia, or 'tins', provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask under and raise their body temperature, which allows them to forage earlier and later in the day. Therefore, checking the refugia at appropriate times of the day (morning and evening) enables the presence/absence of common reptiles to be determined.
- 2.3.17 The refugia remained undisturbed for approximately 1-2 weeks to allow reptiles to find and start using them. Following this initial bedding-in period, refugia were checked at appropriate times of the day on seven occasions during suitable weather conditions, e.g. bright, intermittent or hazy sunshine, not too wet or windy, sunny

⁹ Surveys based on: Life in UK Rivers (2003) '*Monitoring the Otter - Conserving Natura 2000 Rivers*'. Monitoring Series No. 10

¹⁰ Surveys based on: University of Oxford Wildlife Conservation Research Unit (2011) '*Water Vole Conservation Handbook*', 3rd Edition

¹¹ Surveys based on methodology within: Baille *et al.* RA (2010) '*Breeding Birds in the Wider Countryside: their conservation status*', BTO Research Report No. 385, BTO, Thetford.

¹² Surveys based on: Froglife Advice Sheet 10 (1999) '*Reptile Survey - an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.*'

spells following wet or cloudy weather, and air temperatures c.10-20°C, as set out below in Table 2.3. In addition, reptiles basking in the open or partial cover were actively searched for in suitable locations across the Site through direct observation. Existing natural objects (e.g. logs and rocks) and artificial refugia (e.g. debris, tyres, etc.) were also searched, where present, for reptiles or evidence of reptiles (e.g. sloughed skin).

Table 2.3. Reptile survey dates and weather conditions.

| Survey Date | Weather Conditions | | | |
|-------------|--------------------|---------|-----------------|---------------|
| | Wind (BF) | Temp(°) | Cloud Cover (%) | Precipitation |
| 02/09/2020 | 1-2 | 13-16 | 40 | Dry |
| 07/09/2020 | 2 | 14-16 | 90 | Dry |
| 14/09/2020 | 0 | 10-17 | 0 | Dry |
| 18/09/2020 | 3 | 10-16 | 0 | Dry |
| 21/09/2020 | 1 | 11-13 | 100 | Dry |
| 24/09/2020 | 3 | 12 | 80 | Dry |
| 30/09/2020 | 2 | 14-15 | 100 | Dry |

BF0 = calm, BF12 = hurricane force

Great Crested Newt

Habitat Suitability Index (HSI)

2.3.18 As a first step in identifying the potential presence of Great Crested Newt at the Site, a Habitat Suitability Index (HSI) study was undertaken of all relevant water bodies within 250m¹³ of the Site (based on a review of Ordnance Survey mapping and satellite imagery). Guidance set out within Natural England's Method Statement template, to be used when applying for a Great Crested Newt development licence, states that surveys of ponds within 500m of a site are only required when '(a) data indicates that the pond(s) has potential to support large Great Crested Newt population, (b) the footprint contains particularly favourable habitat, (c) the development would have a substantial negative effect on that habitat and (d) there is an absence of dispersal barriers.' Given that in this instance, none of the four points listed above are applicable to the Site, it is considered that survey of ponds within 500m of the Site boundary is not required, and that survey of ponds within 250m represents adequate survey effort.

2.3.19 An HSI study is used to assess the potential of water bodies to support Great Crested Newt. It is undertaken by attributing a score to a number of factors that can affect the presence or absence of this species. Ten factors are utilised in an HSI assessment, as described below:

- *S1 Location.* The location of the water body within Great Britain;
- *S2 Pond area.* The size of the water body;
- *S3 Permanence.* How often the water body dries out;
- *S4 Water Quality.* The water quality, based primarily on invertebrate diversity;
- *S5 Shade.* The percentage of the perimeter of the water body that is shaded;

¹³ 250m is the typical maximum migratory range of this species, see English Nature (2004) 'An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt *Triturus cristatus*'. English Nature Research Report 576

- *SI6 Fowl*. The presence or absence of water fowl;
- *SI7 Fish*. The presence or absence of fish;
- *SI8 Pond Count*. The number of water bodies within 1km of the surveyed water body (not counting those on the far side of major barriers such as roads);
- *SI9 Terrestrial*. The quality of terrestrial habitat surrounding the water body;
- *SI10 Macrophytes*. The percentage cover of the surface area of the water body covered by macrophytes.

2.3.20 The overall suitability of the water body is then determined by entering these figures into an equation compiled by Oldham *et al.* (2000)¹⁴. The suitability of water bodies is classed into one of five categories, either 'poor', 'below average', 'average', 'good' or 'excellent'.

2.3.21 This HSI study was undertaken in line with the guidelines developed by Oldham *et al.* and subsequently adapted by ARG UK (2010)¹⁵. A suitably experienced ecologist undertook the assessment in line with these guidelines, with the study also supplemented by desktop research where appropriate.

Environmental DNA (eDNA)

2.3.22 A method to detect eDNA in water samples was used to investigate the presence/absence of Great Crested Newt within off-Site waterbodies within 250m of the Site, where not separated by major dispersal barriers and for which access was granted by landowners.

2.3.23 Water samples were collected in June 2020 following the procedure outlined in the methods manual prepared for DEFRA by Biggs *et al.* (2014)¹⁶. This is within the identified acceptable seasonal window set out by Natural England (15th April to 30th June). Samples were collected by Aspect Ecology staff who have received specific training on the sampling technique. The water samples were sent for laboratory analysis which was conducted by 'Surescreen Scientifics' and also followed the procedure set out by Biggs *et al.* (2014)¹⁰.

Brown Hairstreak Butterfly¹⁷

2.3.24 To determine the presence/absence of Brown Hairstreak, a thorough search of suitable Blackthorn *Prunus spinosa*, the species of choice for Brown Hairstreak egg laying, within the Site was conducted in December 2020. The hedgerows, treelines and woodland edges within the Site were surveyed for their suitability to support Brown Hairstreak egg laying, taking into consideration the presence of Blackthorn, recent management/flailing and the amount of new Blackthorn growth (favoured by the species for egg laying). Where possible the southern aspects of such features, favoured for egg laying by the species, were surveyed.

¹⁴ Oldham RS, Keeble J, Swan MJS & Jeffcote M (2000) 'Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*)'. Herpetological Journal 10 (4), 143-155

¹⁵ Amphibian & Reptile Groups of the UK (2010) 'ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index'

¹⁶ Biggs J., Ewald N., Valentini A., Gaboriaud C., Griffiths R.A., Foster J., Wilkinson J., Arnett A., Williams P. and Dunn F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Annex 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

¹⁷ Surveys based on methodology within: UKBMS (2016) NG3: Brown Hairstreak Egg Count Guidance Notes. Butterfly Conservation and The Centre for Ecology and Hydrology, Wareham.

https://www.ukbms.org/Downloads/NG3_Brown%20Hairstreak%20Egg%20Count%20Guidance.pdf

2.3.25 Habitat quality was classified as either unsuitable or as having low, medium or high suitability to support the species. The classification was based on the quantity of Blackthorn present, the proportion of that which was young/new growth and the degree to which it was damaged/recently managed. The classification of habitat quality was made using guidance for the species from the UK Butterfly Monitoring Scheme. Brown Hairstreak eggs were then found and identified within the Site using a method modified from the UK Butterfly Monitoring Scheme.

2.4 Survey Constraints/Limitations

2.4.1 All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons.

2.4.2 Attention was paid to the presence of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, the detectability of such species varies due to a number of factors, e.g. time of year, Site management, etc., and hence the absence of invasive species should not be assumed even if no such species were detected during the Phase 1 survey.

2.4.3 A small number of reptile refugia were destroyed by farm machinery during the survey period, however these were replaced and left to “bed in” before surveys continued. As such this is considered unlikely to have affected the robustness of the survey results.

2.4.4 Densely vegetated habitats within the Site have the potential to reduce the detectability of field signs for faunal species such as Badger. A detailed survey was able to be completed and, whilst dense woodland is present within the Site, no field signs were found in the accessible sections of the woodland or at the woodland edges such that it is considered that the survey results do provide an accurate baseline of the Site for Badger.

2.5 Ecological Evaluation Methodology

2.5.1 The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018)¹⁸, which involves identifying ‘important ecological features’ within a defined geographical context (i.e. international, national, regional, county, district, local or site importance). For full details refer to Appendix 5903/2.

2.6 National Policy Approach to Biodiversity in the Planning System

2.6.1 The National Planning Policy Framework (NPPF)¹⁹ describes the Government’s national policies on ‘conserving and enhancing the natural environment’ (Chapter 15). NPPF is accompanied by Planning Practice Guidance on ‘Biodiversity, ecosystems and green infrastructure’ and ODPM Circular 06/2005²⁰.

¹⁸ CIEEM (2018) ‘Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine’, ver. 1.1, Chartered Institute of Ecology and Environmental Management, Winchester

¹⁹ Ministry of Housing, Communities & Local Government (2019) ‘National Planning Policy Framework’

²⁰ ODPM (2006) ‘Circular 06/2005: Planning for Biodiversity and Geological Conservation – A Guide to Good Practice’

- 2.6.2 NPPF takes forward the Government's strategic objective to halt overall biodiversity loss²¹, as set out at Paragraph 170, which states that planning policies and decisions should contribute to and enhance the natural and local environment by:

'minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'

- 2.6.3 The approach to dealing with biodiversity in the context of planning applications is set out at Paragraph 175:

'When determining planning applications, local planning authorities should apply the following principles:

- a) *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;*
- b) *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;*
- c) *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*
- d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.*

- 2.6.4 The above approach encapsulates the 'mitigation hierarchy' described in British Standard BS 42020:2013²², which involves the following step-wise process:

- **Avoidance** – avoiding adverse effects through good design;
- **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects;
- **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm; and

²¹ DEFRA (2011) 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services'

²² British Standards Institution (2013) 'Biodiversity – Code of practice for planning and development', BS 42020:2013

- **Enhancement** – planning decisions often present the opportunity to deliver benefits for biodiversity, which can also be explored alongside the above measures to resolve potential adverse effects.

2.6.5 The measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development (BS 42020:2013, section 5.5).

2.7 Local Policy

2.7.1 The Site lies within the remit of Cherwell District Council. Policies relevant to the proposals, addressing Ecology and Biodiversity are set out within the below documents:

The Cherwell Local Plan 2011-2031²³

Policy ESD 9: Protection of the Oxford Meadows SAC

‘Developers will be required to demonstrate that:

- *During the construction of the development there will be no adverse effects on the water quality or quantity of any adjacent or nearby watercourse*
- *During operation of the development any run-off of water into adjacent or surrounding watercourses will meet Environmental Quality Standards (and where necessary oil interceptors, silt traps and Sustainable Drainage Systems will be included)*
- *New development will not significantly alter groundwater flows and that the hydrological regime of the Oxford Meadows SAC is maintained in terms of water quantity and quality*
- *Run-off rates of surface water from the development will be maintained at greenfield rates.’*

Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment

‘Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- *In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources*
- *The protection of trees will be encouraged, with an aim to increase the number of trees in the District*
- *The reuse of soils will be sought*
- *If significant harm 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 development will not be permitted*

²³ Cherwell District Council (July 2015) ‘The Cherwell Local Plan 2011-2031. Part 1 Adopted 20 July 2015 (incorporating Policy Bicester 13 re-adopted 19 December 2016)’.

- *Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity*
- *Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity*
- *Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity*
- *Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value*
- *Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution*
- *Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably*
- *A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.'*

In addition, although outside of the main policy text it is a requirement of Policy ESD 10, as set out at paragraph B.237 that:

'All developments around Bicester will require surveys carried out for the brown hairstreak butterfly. Surveys should include consideration of the site's value as a wildlife corridor and the contribution it makes to ecological networks.'

Policy ESD 11: Conservation Target Areas

'Where development is proposed within or adjacent to a Conservation Target Area biodiversity surveys and a report will be required to identify constraints and opportunities for biodiversity enhancement. Development which would prevent the aims of a Conservation Target Area being achieved will not be permitted. Where there is potential for development, the design and layout of the development, planning conditions or obligations will be used to secure biodiversity enhancement to help achieve the aims of the Conservation Target Area.'

Policy Bicester 1: North West Bicester Eco-Town

The above policy is also of relevance, as the Site forms a part of the allocated area. It is stated:

‘Planning permission will only be granted for development at North West Bicester in accordance with a comprehensive masterplan for the whole area to be approved by the Council as part of a North West Bicester Supplementary Planning Document. The Council will expect the Masterplan and applications for planning permission to meet the following requirements:’

Full details are set out within the policy wording of the Local Plan, points directly relating to biodiversity include:

- *‘Development that respects the landscape setting and that demonstrates enhancement, restoration or creation of wildlife corridors to achieve a net gain in biodiversity*
- *Preservation and enhancement of habitats and species on site, particularly protected species and habitats and creation and management of new habitats to achieve an overall net gain in biodiversity including the creation of a local nature reserve and linkages with existing BAP habitats*
- *A Landscape and Habitats Management Plan to be provided to manage habitats on site and to ensure this is integral to wider landscape management. ‘*

North-West Bicester Supplementary Planning Document (SPD)²⁴

The above SPD expands upon Policy Bicester 1 of the Local Plan. There are a number of ‘Development Requirements’ set out within the SPD of direct relevance to biodiversity including:

- Development Requirement 9 ‘Green Infrastructure and Landscape,’ paragraph 4.189:
‘There should be areas where biodiversity is the principal outcome, such as the nature reserve, parts of the country park, and the wildlife corridors and buffers. In addition, opportunities to maximise biodiversity in other green spaces should be taken.’
- Development Principle 9 (a) – ‘Tree Planting’, paragraph 4.191:
‘To reflect the Biodiversity Strategy, native trees and shrubs should be planted on the site particularly within woodland, the country park, the nature reserve, and ecological buffers and corridors but also as a proportion of other plantings.’
- Development Requirement 9 (b) – ‘Development Edges’ paragraphs 4.205-4.206 and 4.208-4.209:
‘...The alignment of some hedgerows also provides linkages/connections within the site and between the existing town and surrounding countryside for people and wildlife. A block of broadleaved semi-natural woodland west of Home Farm will be retained within

²⁴ Cherwell District Council (February 2016) ‘North-west Bicester Supplementary Planning Document’

a buffer zone of semi-natural habitat linked to the green space along the water courses. Key strategic hedges are identified on the green infrastructure framework (figure 12).

The Bure and its tributaries are important local watercourse. The stream corridors and field boundaries provide a further structure and detail to the masterplan having multi-functional roles in the provision of green space, habitat, biodiversity gain, sustainable drainage, recreation and health, movement and access. They are intrinsic to the site as a whole....

...The masterplan uses the existing field boundaries and hedgerows to give the layout of the proposed development structure. Hedgerows define the site layout recognising landscape importance and contribution to biodiversity and habitat. They provide natural corridors throughout the site for wildlife but also for residents as part of the comprehensive cycling and walking network...

...The hedgerows would be managed in accordance with a Local Management and Habitats Plan (LMHP) to ensure they provide habitat suitable for the fauna that were recorded on site prior to development, in particular nesting birds (non-farmland specialists), mammals and invertebrates, including the hair streak butterfly and other notable invertebrates. They would also provide wildlife corridors’.

- Development Requirement 9 (c) – ‘Hedgerows, dark buffers and stream corridors’, paragraphs 4.212 – 4.215:

‘Hedgerow loss should be minimised and mitigated for and existing hedges retained as part of the landscape framework and breaches of hedges minimised in designing the layout of development. Retained hedgerows identified on the masterplan will be enriched by semi-natural vegetation in buffer zones, a minimum of 10m either side of the hedgerow in accordance with the Green Infrastructure and Landscape Strategy.

The establishment of a minimum 60 metre corridor to the watercourse (30metres each side of the centre line) shall be provided to create a strong landscape feature in the scheme and secure the opportunity for biodiversity net gain from the development...

...Connectivity between habitats and ecosystems must be planned and protected. The resilience of the ecosystems in around North West Bicester depends on maintaining connectivity for the full range of wildlife and plants. All planning applications should provide plans showing how wildlife corridors of all sorts will be maintained within the site and also connect with neighbouring sites in accordance with the North West Bicester masterplan and Biodiversity Strategy. A plan showing protected dark corridors across the site must be included.’

A 20 metre buffer along either side of the designated hedgerows recognised for their ecological value will be provided to create a ‘dark corridor’ for nocturnal species such as bats. The hedgerow buffers should be provided in accordance with the Green Infrastructure and Landscape Strategy. The lighting scheme for the development will avoid disturbance to these dark areas’.

- Development Requirement 9 (e) – ‘Biodiversity’ paragraphs 4.227 – 4.232.
‘Biodiversity mitigation and enhancement shall be incorporated into development proposals to provide a net biodiversity gain. As it is not possible to mitigate for the impact of farmland birds on the site, offsite mitigation measures should be provided and all applications within the masterplan area should contribute to the provision of off-site mitigation.

Proposals must demonstrate inclusion of biodiversity gain within the built environment for example through planting, bird, bat and insect boxes and the inclusion of green roofs.

A biodiversity strategy which is part of an approved strategy for the whole masterplan area, shall accompany all planning applications. It should include an accepted numerical metric to show that a net gain in biodiversity will be achieved...

...A detailed Landscape and Habitats Management Plan including a comprehensive ecological monitoring programme will be required for all reserved matters and full planning applications’.

The above requirements and principles, where of relevance to biodiversity, make provision for new opportunities for biodiversity, including new planting to include native trees and shrubs where possible. There is also a strong emphasis on appropriate buffers for hedgerows, woodlands and streams, connectivity across sites and dark buffers and corridors.

3 Ecological Designations

3.1 Statutory Designations

Description

- 3.1.1 The statutory designations of ecological importance that occur within the local area are shown on Plan 5903/ECO2. The nearest statutory designation is Bure Park Local Nature Reserve (LNR) located approximately 0.7km to the south of the Site. It is designated on the basis of grassland meadow, broad-leaved woodland, hedgerows, scrub, the River Bure and a pond known to support Great Crested Newts.
- 3.1.2 The next nearest statutory designation is Ardley Cutting & Quarry Site of Special Scientific Significance (SSSI) located approximately 1.3km to the west of the Site. The SSSI is designated on the basis of geological interest as well as ecological interest associated with limestone grassland, scrub, ancient woodland and wetland habitats. The SSSI also supports a range of notable invertebrate fauna and Great Crested Newt populations.
- 3.1.3 The Site lies within a SSSI Impact Risk Zone for Ardley Cutting & Quarry, however residential development is not listed as one of the risk factors to the SSSI.
- 3.1.4 There are no designations of international importance within 15km of the Site. However, Oxford Meadows Special Area of Conservation (SAC) lies approximately 17.1km to the south west of the Site. The SAC is designated on the basis of Annex I habitat lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) and Annex II species Creeping Marshwort *Apium repens*. The SAC includes vegetation communities that are perhaps unique in the world in reflecting the influence of long-term grazing and hay-cutting on lowland hay meadows whilst Port Meadow of Oxford Meadows is the larger of only two known sites in the UK for Creeping Marshwort. The Site is well separated from Oxford Meadows SAC.

3.2 Non-statutory Designations

Description

- 3.2.1 The non-statutory designations of nature conservation interest that occur within the local area are shown on Plan 5903/ECO2. The nearest non-statutory designation is Twelve Acre Copse Oxfordshire Local Wildlife Site (LWS) located approximately 1.1km north west of the Site. The LWS is designated on the basis of its ancient woodland habitat and that it supports protected and notable species such as Bluebell *Hyacinthoides non-scripta* as well as species typical of long established woodland.
- 3.2.2 The next nearest non-statutory designation is Skimmingdish Lane Balancing Pond Cherwell District Wildlife Site located approximately 1.2km south east of the Site. It is designated on the basis of being an area of unimproved grassland (with remnant lowland meadow) and remnant lowland fen Section 41 Habitats of Principle Importance.
- 3.2.3 Tusmore and Shelswell Park Conservation Target Area (CTA) lies approximately 1km north-west of the Site. According to Policy ESD 11 of the Cherwell Local Plan 2011-2031²³ 'where development is proposed within or adjacent to a Conservation Target

Area biodiversity surveys and a report will be required to identify constraints and opportunities for biodiversity enhancement.’ Tusmore and Shelswell Park CTA is well separated from the Site and the development is not considered to adversely affect the CTA. A second Conservation Target Area lies 1.3km west of the Site, Ardley and Heyford CTA. Similarly, this CTA is well separated from the Site and as such will not be affected by the development.

3.3 Ancient Woodland and Notable Trees

- 3.3.1 A small number of areas of ancient woodland are located within the wider surroundings of the Site, the closest is approximately 0.8km to the north of the Site, as shown on Plan 5903/ECO2.
- 3.3.2 There are no ancient, veteran or notable trees with the Site, or within 500m of the Site boundary.

4 Habitats and Ecological Features

4.1 Background Records

4.1.1 Information returned from TVERC does not include any specific records of protected, rare or notable plant species from within or immediately adjacent to the Site boundary.

4.2 Overview

4.2.1 The habitats and ecological features present within the Site, as shown on Plan 5903/ECO3, are described below and evaluated in terms of intrinsic ecological value, such as in relation to the presence of rare plant communities or individual plant species of elevated interest. The value of habitats for the fauna they may support is considered separately in section 5 below.

4.2.2 The following habitats/ecological features were identified within the Site:

- Arable;
- Semi-improved Grassland;
- Hedgerows and Treelines;
- Scattered Trees;
- Woodland;
- Scrub;
- Dry Ditch;
- Ponds;
- Hardstanding.

4.2.3 Additional off-Site habitats also include:

- Watercourses.

4.2.4 The locations of these habitat types and features are illustrated on Plan 5903/ECO3 with the habitats within the Site described in detail below.

4.3 Priority Habitats

4.3.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Sections 41 and 42 of the NERC Act require the Secretary of State to publish a list of habitats which are of principal importance for conservation in England and Wales, respectively. This list is largely derived from the 'Priority Habitats' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority habitats under the subsequent country-level biodiversity strategies.

- 4.3.2 Of the habitats within the Site, hedgerows, treelines and woodland are considered likely qualify as UK Priority Habitats. This is discussed further in the relevant habitat sections below.

4.4 Arable

Description

- 4.4.1 The north west of the Site is dominated by uncultivated arable land (field F8). At the time of survey the field comprised bare ground with evidence of remnant *Brassica* sp. crop along with encroaching ruderal species, including Groundsel *Senecio vulgaris*, Scarlet Pimpernel *Anagallis arvensis*, Fat-hen *Chenopodium album*, Field Forget-Me-Not *Myosotis arvensis*, Knotgrass *Polygonum aviculare*, Garlic Mustard *Alliaria petiolata*, Creeping Thistle *Cirsium arvense*, Cow Parsley *Anthriscus sylvestris*, Wild Pansy *Viola tricolor* and Common Field-speedwell *Veronica persica*. A field margin approximately 1-1.5m wide separates the arable field from the adjacent treeline, this is described in the grassland section below.

Evaluation

- 4.4.2 At the time of survey, the arable field was uncultivated, supporting bare ground, remnant crop and colonising ruderal species encroaching from the field margins, hedgerows and treelines. The habitat was recorded to support sparse, common and widespread species only, is unlikely to support any significant wildlife interest and does not support associated features of interest such as UK Priority Habitat arable field margins, as such this habitat is not considered to form an important ecological feature.

4.5 Semi-improved Grassland

Description

- 4.5.1 The central portion of the Site, to the south-east of the arable field described above, is dominated by semi-improved grassland, split into four fields (F1-F4) bound and intersected by hedgerows, treelines, fence-lines and woodland, as shown on Plan 5903/ECO3. Three further semi-improved grassland fields (F5-F7) were also present forming the most south-eastern portion of the Site, intersected by a single track road and fence-lines. A semi-improved grassland field margin is also present bounding the arable field.
- 4.5.2 **Fields F1-F4.** At the time of survey fields F1-F4 had not been subject to recent management, with semi-improved grassland comprising a long sward height of up to 1m with associated tall ruderal vegetation throughout. Fields F1-F4 were dominated by Cock's-foot *Dactylis glomerata*, with a high incidence of Cow Parsley throughout. Additional species recorded included Meadow Foxtail *Alopecurus pratensis*, Yorkshire-fog *Holcus lanatus*, Soft Brome *Bromus hordeaceus*, Bent *Agrostis* sp., Barren Brome *Anisantha sterilis*, False Oat-grass *Arrhenatherum elatius*, Common Nettle *Urtica dioica*, Cleavers *Galium aparine*, Common Hogweed *Heracleum sphondylium*, Field Bindweed *Convolvulus arvensis*, Red Clover *Trifolium pratense*, Dove's-foot Crane's-bill *Geranium molle*, Goat's-beard *Tragopogon pratensis*, Common Field-speedwell, Fat-hen, Smooth Sow-thistle *Sonchus oleraceus* and Black-bindweed *Fallopia convolvulus*.

- 4.5.3 **Fields F5 and F6.** Fields F5 and F6 comprise a single field intersected by a post and wire fence. Fields F5 and F6 were similar in nature to F1-F4, supporting long-sward grassland, up to 1m in height, not recently managed at the time of survey with exception of a narrow mowed strip, present at the south-eastern edge of F6. The sward is dominated by Soft Brome, Cock's-foot and Meadow Foxtail with a lower incidence of Cow Parsley than recorded throughout fields F1-F4. Additional species recorded in this sward included Smooth Meadow-grass *Poa pratensis*, Perennial Ryegrass *Lolium perenne*, Dandelion *Taraxacum* agg., Field Bindweed, Creeping Thistle, Creeping Buttercup *Ranunculus repens*, Yarrow *Achillea millefolium*, Common Nettle, Broad-leaved Dock *Rumex obtusifolius*, Spear Thistle *Cirsium vulgare*, Bulbous Buttercup *Ranunculus bulbosus*, Black Bindweed, Common Mallow *Malva sylvestris* and Wild Teasel *Dipsacus fullonum*.
- 4.5.4 **Field F7.** A small mown grassland field, field F7, is present to the far south-east of the Site. At the time of survey this field had been mown to a short sward height of less than 10cm. The area is bound by a post and wire fence and scattered trees are present throughout. Dominant species included Meadow-grass *Poa sp.* and Yorkshire-fog, with Cock's-foot, Perennial Ryegrass, False Oat-grass and a lower incidence of herbaceous species than grassland elsewhere within the Site. Herbaceous species present include Creeping Buttercup, Cow Parsley, Dandelion agg., Creeping Thistle, Broad-leaved Dock, Field Bindweed, Spear Thistle and Creeping Cinquefoil *Potentilla reptans*.
- 4.5.5 **Arable Field Margin.** Species poor semi-improved grassland is also present within the Site at the arable field margins, measuring between 1-1.5m in width with a sward height of 0.3-1m. Species associated with the field margin included Soft Brome, Brome *Bromus sp.*, Perennial Ryegrass, Cock's-foot, Cow Parsley, Cut-leaved Crane's-bill *Geranium dissectum*, White Champion *Silene latifolia*, Spear Thistle, Greater Burdock *Arctium lappa* and Common Nettle.
- 4.5.6 Several brash piles are present in the south west corner of field **F5**, largely made up of logs and rubble. Given the size and nature of the brash piles, it is considered that they do not form important ecological features.

Evaluation

- 4.5.7 Overall, these areas of grassland within the Site supports a low diversity of common and widespread species and based on the type and abundance of species present can be classified as poor semi-improved grassland²⁵, a habitat type that is not uncommon in the local area. Fields F1-F6 and the arable field margin appear to be subject to infrequent management, having been subject to a cut in late summer, noted during subsequent faunal survey Site visits, whilst field F7 appears to be subject to management on a more frequent basis. Some evidence of grazing cattle was also noted on field F5. Given the above, the grassland is considered to be an important ecological feature at the Site level only.

4.6 Hedgerows and Treelines

Description

²⁵ Natural England (2010) 'Higher Level Stewardship – Farm Environment Plan (FEP) Manual', 3rd Edition

4.6.1 Twelve hedgerows and four treelines are present within or adjacent to the Site, largely located at Site boundaries. The hedgerows and treelines are described in more detail in Table 4.1 below.

Table 4.1. Hedgerow and Treeline descriptions.

| No. | H | W | Woody species | Avg. per 30m* | Ground flora & climbers | Associated features | Comments (including structure / management) | Likely to qualify# |
|--|------|------|---|---------------|---|--|--|--------------------|
| On-Site Hedgerows and Treelines | | | | | | | | |
| H1 | 1m | 2m | <u>Hawthorn</u> , <u>Elm</u> , <u>Dog-rose</u> , <u>Beech</u> , <u>Bramble</u> | 4 | Bramble, Common Nettle | Fence runs adjacent along northern side | Area of scrub transitioning to hedgerow in northern portion, including some immature planted Beech | N |
| H2 | 1.5m | 2m | <u>Field Maple</u> , <u>Dogwood</u> , <u>Dog-rose</u> , <u>Elm</u> , <u>Wayfaring-tree</u> | 5 | Cow Parsley, Common Nettle, Ivy and grass sp. as per adjacent field | Adjacent to B4100 and boundary fence | Largely lies off-Site, the other side of a boundary fence. No signs of recent management | Y |
| H3 | 4-6m | 3m | <u>Elm (D)</u> , <u>Elder</u> , <u>Hawthorn (D)</u> , <u>Field Maple</u> , <u>Dog-Rose</u> , <u>Blackthorn</u> , <u>Large-leaved Lime</u> , Horse Chestnut, <u>Oak sp.</u> , <u>Ash</u> | 9 | Nettle, Cow Parsley, Ivy, Cleavers | Standard trees associated with hedgerow | No evidence of recent management, dense and continuous | Y |
| H4 | 1.5m | 0.5m | <u>Hawthorn</u> , <u>Blackthorn</u> , <u>Wild Cherry</u> , <u>Field Maple</u> , <u>Elm</u> , <u>Bramble</u> , <u>Elder</u> , <u>Sycamore</u> , <u>Ash</u> , <u>Rowan</u> | 8 | Ivy, Nettle | Associated with neighbouring development, behind boundary fence. | Immature, gappy in places | N |
| H5 | 6m | 3-4m | <u>Elm</u> , <u>Field Maple</u> , <u>Oak sp.</u> , <u>Elder</u> , <u>Dog-rose</u> , <u>Bramble</u> | 5 | Bramble, Cleavers, Common Nettle, Cow Parsley | Adjacent to off-site watercourse | No evidence of recent management, outgrown in nature | N |
| H6 | 6-8m | 4-5m | <u>Hawthorn</u> , <u>Elder (D)</u> , <u>Elm</u> , <u>Field Maple</u> , <u>Dog-rose</u> , <u>Blackthorn (D)</u> | 6 | Ground-ivy, Cleavers, Common Nettle, grasses as per adjacent fields | <10% gaps, standard trees present | No evidence of recent management, outgrown in nature, dense and continuous | Y |
| H7 | 1-2m | 1m | <u>Hawthorn (D)</u> , <u>Bramble</u> , <u>Blackthorn</u> , <u>Dog-rose</u> | 3 | As per adjacent field | <10% gaps, connects with other hedgerows/treelines | No evidence of recent management, sparse in nature | N |
| H8 | 6m | 4m | <u>Blackthorn</u> , <u>Hawthorn</u> , <u>Elder</u> , <u>Elm</u> , <u>Apple</u> , <u>Dog-rose</u> , <u>Sycamore</u> , <u>Field Maple</u> , <u>Ash</u> , <u>Wild Cherry</u> | 8 | As per adjacent field | <10% gaps, standard trees present | No evidence of recent management, outgrown, dense hedge | Y |

Table 4.1. Hedgerow and Treeline descriptions.

| No. | H | W | Woody species | Avg. per 30m* | Ground flora & climbers | Associated features | Comments (including structure / management) | Likely to qualify# |
|-----------------------------------|--------|------|---|-----------------------|---|---|--|--------------------|
| H9 | 4m | 2-4m | <u>Wild Cherry, Ash, Oak sp., Blackthorn (D), Field Maple, Privet (D), Dog-rose, Dogwood, Wayfaring-tree</u> | 9 (within H9 and TL4) | Ground-ivy, Garlic Mustard, grasses as per adjacent habitat | Merges with TL4 to south becoming hedgerow in northern sections, <10% gaps, connects to other hedgerows/treelines | Not recently managed during May survey but subject to winter flailing. | Y |
| H10 | 2m | 1-2m | <u>Blackthorn(D), Elder, Bramble Hawthorn, Dog-rose</u> | 4 | As per adjacent field boundary/bare earth associated with ditch | Ditch on Site side of hedgerow that runs along the entire length within the Site | Not recently managed during May survey but subject to winter flailing. | N |
| H11 | 5-6m | 2m | <u>Field Maple (D), Ivy, Hawthorn, Blackthorn</u> | 3 | As per adjacent field margin | Hedgerow joins wooded area, <10% gaps | Managed section maintained at a height of c.4m in May and all subject to winter flailing | N |
| H12 | 6m | 3m | <u>Elder, Hawthorn, Elm, Spindle</u> | 4 | As per adjacent field | Hedgerow runs along southern boundary and meets woodland at either end | Gappy in places, no evidence of recent management | N |
| TL2 | 14m | 5m | <u>Crack Willow, Ash, Hawthorn, Poplar sp., Elder</u> | 4 | Bramble, Garlic Mustard, Common Nettle | Runs along watercourse WC1 | No evidence of recent management | N |
| TL3 | 12m | 5m | <u>Hawthorn, Elder, Field Maple, Blackthorn, Elm, Wayfaring-tree, Ash, Sycamore, Pine sp.</u> | 7 | Cow Parsley, Brome sp. | Adjacent to eastern Site boundary | No evidence of recent management | Y |
| TL4 | 10m | 4m | <u>Oak sp., Field Maple, Sycamore, Hawthorn, Ash, Blackthorn, Privet, Dog-Rose, Bramble, Dogwood, Spindle</u> | 9 | Garlic Mustard, Ground-ivy, grass sp. as per adjacent field | Continuation of H8 | No evidence of recent management | Y |
| Adjacent Off-Site Treeline | | | | | | | | |
| TL1 | 10-12m | 2-4m | <u>Cypress sp.(D), Sycamore, Ash, Horse Chestnut</u> | 1 | Ivy, Bramble, Garlic Mustard, Common Nettle | Adjacent to, watercourse | Evidence of past management, not recently | N |

Woody species (as listed under Schedule 3 of the Hedgerows Regulations 1997) and woodland ground flora species (as listed under Schedule 2 of the Hedgerows Regulations 1997) underlined, y = young, sm = semi-mature, m = mature, pv = possible veteran, B = bank, W = wall, br = bridleway, f/p = footpath, b/w = byway, (D) = dominant species

* estimated average number of woody species (as listed under Schedule 3 of the Hedgerows Regulations 1997) in any one 30m stretch

likely to qualify – as ‘important’ under the wildlife and landscape criteria of the Hedgerows Regulations 1997

4.6.2 The hedgerows and treelines are generally unmanaged, although a number, particularly associated with the arable field, were subject to winter flailing. Hedgerows and treelines are generally dominated by a moderate assemblage of number of woody species including Hawthorn *Crataegus monogyna*, Blackthorn, Field Maple *Acer campestre*, Ash *Fraxinus excelsior*, Elder *Sambucus nigra*, Elm *Ulmus sp.* and Oak *Quercus sp.* Several of the hedgerows have standard trees associated with them, as described above.

Evaluation

4.6.3 Of the hedgerows and treelines within the Site present, five hedgerows, H2, H3, H6, H8 and H9 and two treelines, TL3 and TL4 are considered likely to qualify as “Important” under the relevant criteria of the Hedgerows Regulations 1997 due to the number of woody species present. Hedgerow H4, although supporting up to eight ‘woody species’ was gappy and sparse in nature throughout and so is not considered likely to qualify.

4.6.4 All of the on and off-Site hedgerows and treelines (with exception of treeline TL1) within the Site are likely to qualify as a Priority Habitat based on the standard definition²⁶, which includes all hedgerows (>20m long and <5m wide) consisting predominantly (≥80%) of at least one native woody species. It has been estimated that approximately 84% of countryside hedgerows in GB qualify as a Priority Habitat under this definition.²⁶

4.6.5 Accordingly, collectively the hedgerows and treelines within the Site are considered to be an important ecological feature at the local level.

4.7 Scattered Trees

Description

4.7.1 Numerous scattered trees of varying ages are present within the Site, largely situated within the short sward mown grassland to the south-east of the Site (as shown on Plan 5903/ECO3). Species recorded include Horse Chestnut *Aesculus hippocastanum*, Apple *Malus sp.*, Oak sp., Large-leaved Lime *Tilia platyphyllos*, Field Maple, Hawthorn and Beech *Fagus sylvatica*.

Further trees associated within hedgerows and treelines were additionally recorded within Site, as shown on Plan 5903/ECO3 and described above.

Evaluation

4.7.2 The trees that fall within the Site boundary are largely associated with the hedgerow and treeline habitats described above or within woodland described below. Scattered trees are largely associated with the south-eastern field (F7) and lining the off-site access road. They contain a number of native species that are semi-mature to mature in nature, and are considered to offer potential opportunities for faunal species, as discussed below. As such, trees are considered to be an important ecological feature at the Site level.

²⁶ Based on: Biodiversity Reporting and Information Group (2011) ‘UK Biodiversity Action Plan (BAP) Priority Habitat Descriptions’, ed. Ant Maddock

4.8 Woodland

Description

- 4.8.1 Two areas of deciduous broadleaved woodland are present along the south-western boundary of the Site, labelled woodlands W1 and W2 on Plan 5903/ECO3.
- 4.8.2 Woodland W1 to the south of the arable field is semi-mature to mature in nature and supports a relatively dense canopy to c. 12m in height dominated by Ash and Field Maple with Hawthorn also present, above an understorey, which is sparse in areas, of Elder, Ash, Hawthorn and Bramble *Rubus fruticosus* agg. The ground flora was recorded to be dominated by Common Nettle, with Cow Parsley, Dog's Mercury *Mercurialis perennis*, Ivy *Hedera helix*, Garlic Mustard, Lords-and-Ladies *Arum maculatum*, Cleavers and Ground-ivy *Glechoma hederacea*. A dry hollow, likely to have formed a pond at some point, although no evidence of recent water retention was present, was recorded within the east of the woodland and a number of stands of fallen deadwood and Pheasant *Phasianus colchicus* feeders were also recorded within the woodland.
- 4.8.3 Woodland W2 is separated from woodland W1 by a small area of grassland and sits on the south-western boundary of the Site. Woodland W2 was recorded to be semi-mature to mature in nature with a relatively closed canopy to 16m with occasional sunny glades. The canopy was recorded to be dominated by Ash and Hawthorn with Wild Cherry *Prunus avium*, Sycamore *Acer pseudoplatanus*, English Elm *Ulmus procera*, Horse Chestnut and Field Maple also present. A relatively dense understorey was recorded through the majority of the woodland, dominated by Elder with English Elm, Wayfaring-tree *Viburnum lantana*, Hazel *Corylus avellana* and Bramble also present. The ground flora within the woodland was recorded to be dominated by a dense carpet of Dog's-mercury and Common Nettle with Cow Parsley, Lords-and-Ladies, Cleavers and Ground-ivy. As per woodland W1, areas of fallen deadwood were also recorded within the woodland, along with Barn Owl boxes, although no sign of occupation was visible from the ground during the Phase 1 Habitat survey.

Evaluation

- 4.8.4 Both woodlands W1 and W2 are mapped as the UK Priority Habitat Deciduous Woodland. The woodlands support a range of semi-mature to mature native species and varied understories and ground flora such that it is considered likely that the habitat does qualify as Priority Habitat. A number of notable 'woodland species' (as listed under Schedule 2 of the Hedgerows Regulations 1997) including Dog's-mercury and Lords-and-Ladies were recorded within the woodland were recorded, however the woodland is not mapped as (on the Defra MAGIC database) or considered to be ancient woodland. The woodland areas within the Site also have the potential to offer potential opportunities for a variety of faunal species. As such, woodland within the Site is considered to be an important ecological feature at the Local level.

4.9 Scrub

Description

- 4.9.1 Small areas of scattered scrub and occasional patches of dense scrub are present within the Site as shown on Plan 5903/ECO3. Scrub was recorded to comprise Bramble, Elder, Dog-rose *Rosa canina*, Hawthorn, Elm sp. and Blackthorn.

Evaluation

- 4.9.2 The areas of scrub comprise common and widespread native species and are small in extent. As such, these areas are not considered to be an important ecological feature of the Site.

4.10 **Dry Ditch**

Description

- 4.10.1 A single ditch is present along the northern boundary of the arable field. At the time of the Phase 1 survey and later during winter faunal survey work it was recorded to be dry. It is approximately 0.5m wide and up to 1m deep, and runs along the length of hedgerow H10 to the north of the arable field. No aquatic or marginal vegetation was recorded to be present.

Evaluation

- 4.10.2 The dry ditch offers limited ecological value and is therefore not considered to form an important ecological feature.

4.11 **Ponds**

Description

- 4.11.1 A dry hollow, which may have been a pond at some point, although does not appear to have held water for some time is present within woodland W1 labelled Pond **P1**, as shown on Plan5903/ECO3.
- 4.11.2 A single pond is located within 250m of the Site boundary, between the parcels of the Site, marked **P2** on Plan5903/ECO3. The off-site pond is considered with regard to its value for faunal species in Chapter 5 below.

Evaluation

- 4.11.3 The on-Site 'pond', P1, is now a dry hollow and does not appear to regularly hold water and is therefore of negligible ecological value and not an important ecological features. The off-Site pond, P2, is considered with regard to faunal species in Chapter 5 below.

4.12 **Hardstanding**

Description and Evaluation

- 4.12.1 Hardstanding is present within the Site boundary, largely associated with the areas of new development to the north and south of the Site, as shown on Plan 5903/ECO3. In addition, a small section of hardstanding, the northern portion of the access road between field F6 and F7, falls within the Site boundary.
- 4.12.2 The areas of hardstanding are comprised of tarmac and are largely devoid of vegetation. This habitat is therefore not considered to be an important ecological feature and is of negligible ecological importance.

4.13 Watercourses (off-Site)

Description

- 4.13.1 Several watercourses are present bounding the south-eastern and south-western boundaries of the Site, labelled WC1 and WC2 respectively on Plan5903/ECO3.
- 4.13.2 Watercourse WC1 flows in a south-westerly direction, within a channel generally 1-1.5m in width, contained within shallow banks of approximately 1m in height. Within the northern reaches adjacent to the Site, the watercourse was recorded to be overshadowed and have a gentle flow of c.30cm in depth over a gravel bed with some leaf litter and marginal vegetation including Willowherb *Epilobium* sp. and Sedge *Carex* sp. Further south where WC1 runs adjacent to field F5, the watercourse continues to be heavily overshadowed by treeline TL1 over a more silty bed. Limited aquatic and marginal vegetation is present as a result of overshadowing. Aquatic vegetation present included occasional Yellow Iris *Iris pseudacorus*, Willowherb sp. and Sedge sp.. During faunal surveys in the summer, watercourse WC1 was recorded to be largely be dry.
- 4.13.3 Adjacent to the south-western Site boundary, the watercourse WC2, similar in nature to WC1, was recorded to be dry for much of the year with scattered trees and scrub along the banks, and encroaching tall ruderal vegetation. Occasional areas holding shallow levels of water were recorded to support Yellow Iris.

Evaluation

- 4.13.4 The stretches of watercourse adjacent to the Site are largely heavily shaded resulting in the absence of aquatic and marginal vegetation in places. The watercourses were also recorded to be seasonally dry and form more of a ditch than a river feature such that they are not considered to qualify as a UK Priority Habitat. The watercourses represent a linear ecological corridor, as such, this habitat offers the potential to support Otter and Water Vole, as discussed below. Overall the watercourses present are considered to be important ecological features and are of ecological value at the local level.

Habitat Evaluation Summary

- 4.13.5 On the basis of the above, the habitats within the Site which are considered to form important ecological features and will therefore be assessed in the Environmental Statement (ES) are set out at Table 4.2 below.

Table 4.2. Summary of habitat evaluation.

| Habitat | Level |
|-------------------------|-------|
| Semi-improved Grassland | Site |
| Hedgerows and Treelines | Local |
| Scattered Trees | Site |
| Woodland | Local |
| Watercourses (off-site) | Local |

- 4.13.6 Other habitats present within the Site include arable, scrub, a dry hollow (P1), hardstanding and a dry ditch. These do not form important ecological features.

5 Faunal Use Of The Site

5.1 Overview

5.1.1 During the survey work, general observations were made of any faunal use of the Site, with specific attention paid to the potential presence of protected or notable species. Specific survey work to date has been undertaken in respect of bats, Badgers, Otter, Water Vole, breeding birds, reptiles, Great Crested Newt and Brown Hairstreak butterfly with the results described below. Further survey work for bats and breeding birds is proposed in spring 2021.

5.2 Priority Species

5.2.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Sections 41 and 42 of the NERC Act require the Secretary of State to publish a list of species which are of principal importance for conservation in England and Wales, respectively. This list is largely derived from the 'Priority Species' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority species under the subsequent country-level biodiversity strategies.

5.2.2 During the survey work undertaken to date, the UK Priority Species Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared Bat *Plecotus auratus*, Song Thrush *Turdus philomelos*, Common Toad *Bufo bufo*, Common Lizard *Zootoca vivipara*, Grass Snake *Natrix natrix* and Brown Hairstreak *Thecla betulae* butterfly were recorded within the Site. These are discussed further below.

5.3 Bats

5.3.1 **Legislation.** All British bats are classed as European Protected Species under the Conservation of Habitats and Species Regulations 2010 (as amended) and are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). As such, both bats and their roosts (breeding sites and resting places) receive full protection under the legislation (see Appendix 5903/3 for detailed provisions). A number of bat species are also considered S41 Priority Species.

5.3.2 **Background Records.** No specific records of bats from within or adjacent to the Site were returned from the desktop study. Information received from the local records centre (LRC) returned records of Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle, Noctule, Brown Long-eared Bat *Plecotus auratus* and unidentified bat species *Chiroptera* sp. from within 2km of the Site. The closest records of bats were for Brown Long-eared Bat and Common Pipistrelle, recorded in 2015 approximately 0.1km east of the Site.

5.3.3 Third party surveys confirmed several bat roosts, the majority of which lie to the south and west of the Site. A small Common Pipistrelle bat roost in a modern farmhouse building was identified at Home Farm, located just off the western boundary of the Site. In addition, a roost of Brown Long-eared bats and an unconfirmed bat species was identified within St Laurence Church, Caversfield, located next to the B4100, to the north east of the Site. Foraging and commuting bats recorded across the survey area were recorded to be comprised of similar species and at similar levels to that

recorded in the most recent survey work undertaken by Aspect Ecology as set out below.

5.3.4 Survey Results

Roosting

Trees

5.3.5 A number of semi-mature and mature trees are present on or adjacent to the Site, eight of which were identified as offering bat roosting potential, furthermore it is a likely a number of trees within the woodlands could offer bat roosting potential. The results of the tree assessment work undertaken at the Site is illustrated on Plan 5903/ECO3 and summarised in Table 5.1 below.

Table 5.1: Tree inspection results

| Tree No. | Species | Potential Roost Features | Risk Category |
|---------------|----------------|---|---------------|
| T1 (off-Site) | Sycamore | Significant Ivy cover | Low |
| T2 (off-Site) | Horse Chestnut | Significant ivy cover | Low |
| T3 (off-Site) | Horse Chestnut | Peeling bark, knot hole but unclear whether it leads anywhere | Low |
| T4 (off-Site) | Willow sp. | Willow stump with significant cracks and rotten trunk | Moderate |
| T5 | Horse Chestnut | Split limb, knot holes | High |
| T6 | Oak sp. | Several split limbs and lifted bark | Moderate |
| T7 | Horse Chestnut | No obvious signs but the tree is of the age, maturity and nature to support roosting bats | Low |
| T8 | Dead tree | Fallen dead tree with multiple cracks and holes | Moderate |

Commuting and Foraging

5.3.6 The Site is dominated by semi-improved grassland fields and an arable field, with linear features around the field boundaries including hedgerows and watercourses which offer opportunities for commuting and foraging bats. Further areas of habitat within the Site including woodland are also considered to offer some opportunities for commuting and foraging bats. As such, bat activity surveys were undertaken across the Site in August and September 2020. A third survey is proposed for Spring 2021.

5.3.7 **Manual walked transect surveys.** The detailed activity survey results are illustrated on Plan 5903/ECO4, with a summary provided in Tables 5.2 and 5.3 below.

Table 5.2. Results of the dusk walked transect in August 2020.

| Species | Number of Passes Recorded | Approximate % of Total Passes Recorded |
|---------------------|---------------------------|--|
| Common Pipistrelle | 34 | 68 |
| Soprano Pipistrelle | 3 | 6 |
| <i>Myotis</i> sp. | 6 | 12 |
| "Big Bat" sp. | 2 | 4 |
| Noctule | 5 | 10 |
| Total | 50 | 100 |

"Big Bat" sp. refers to Serotine and Leisler's bats

Table 5.3 Results of the dusk walked transect in September 2020.

| Species | Number of Passes Recorded | Approximate % of Total Passes Recorded |
|---------------------|---------------------------|--|
| Common Pipistrelle | 42 | 47 |
| Soprano Pipistrelle | 14 | 15.5 |
| <i>Myotis</i> sp. | 2 | 2 |
| "Big Bat" sp. | 8 | 9 |
| Noctule | 23 | 25.5 |
| Long-Eared sp. | 1 | 1 |
| Total | 90 | 100 |

"Big Bat" sp. refers to Serotine and Leisler's bats

5.3.8 A higher level of activity was recorded in September 2020 with almost double the number of passes recorded compared to August 2020. A total of at least six species were recorded across the two surveys. Activity on both transects was dominated by Common Pipistrelle.

5.3.9 As shown on Plan 5903/ECO4, the highest levels of bat activity was recorded on the northern boundary of the Site, between listening points 11 and 12, likely associated with hedgerow H8, H7 and H3. Within the majority of the Site low to moderate levels of bat activity were recorded, largely associated with the linear features such as the hedgerows and woodland.

5.3.10 **Remote Detector Surveys.** Results of the automated static bat surveys from the two static detectors deployed in August and September 2020 are summarised in Table 5.4 below and shown on Plan 5903/ECO4.

Table 5.4 Total bat registrations per survey session recorded throughout automated activity surveys at positions SD1 and SD2. See Plan 5903/ECO4 for detector locations.

| Detector Location | Species | No. Registrations | | Total Registrations | Average Registrations per hour | | % Detector Total (% Overall Total) | |
|-----------------------|-------------------------|-------------------|-------------|---------------------|--------------------------------|---------------|------------------------------------|----------------|
| | | August | September | | August | September | | |
| SD1 | Common Pipistrelle | 44 | 30 | 74 | 0.62 | 0.33 | 7.84 | (3.15) |
| | Soprano Pipistrelle | 6 | 9 | 15 | 0.09 | 0.10 | 1.59 | (0.64) |
| | Nathusius' Pipistrelle | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | (0.00) |
| | <i>Pipistrellus</i> sp. | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | (0.00) |
| | Noctule | 49 | 241 | 290 | 0.69 | 2.63 | 30.72 | (12.35) |
| | 'Big Bat' sp. | 11 | 536 | 547 | 0.16 | 5.86 | 57.95 | (23.29) |
| | <i>Myotis</i> sp. | 5 | 9 | 14 | 0.07 | 0.10 | 1.48 | (0.60) |
| | Brown Long-eared Bat | 1 | 3 | 4 | 0.01 | 0.03 | 0.42 | (0.17) |
| | Total: | 116 | 828 | 944 | | | 100.00 | (40.19) |
| | | | | | August | September | | |
| SD2 | Common Pipistrelle | 502 | 82 | 584 | 7.11 | 0.90 | 41.57 | (24.86) |
| | Soprano Pipistrelle | 49 | 107 | 156 | 0.69 | 1.17 | 11.10 | (6.64) |
| | Nathusius' Pipistrelle | 0 | 2 | 2 | 0.00 | 0.02 | 0.14 | (0.09) |
| | <i>Pipistrellus</i> sp. | 1 | 0 | 1 | 0.01 | 0.00 | 0.07 | (0.04) |
| | Noctule | 184 | 245 | 429 | 2.61 | 2.68 | 30.53 | (18.26) |
| | 'Big Bat' sp. | 37 | 36 | 73 | 0.52 | 0.39 | 5.20 | (3.11) |
| | <i>Myotis</i> sp. | 59 | 22 | 81 | 0.84 | 0.24 | 5.77 | (3.45) |
| | Brown Long-eared Bat | 3 | 76 | 79 | 0.04 | 0.83 | 5.62 | (3.36) |
| Total: | 835 | 570 | 1405 | | | 100.00 | (59.81) | |
| OVERALL TOTAL: | | 951 | 1398 | 2349 | | | | |

"Big Bat" sp. refers to Noctule, Serotine and Leisler's bats

5.3.11 The highest number of registrations as shown above in Table 5.4 and at Plan 5903/ECO4 were recorded at static detector location SD2 adjacent to the treeline and off-Site watercourse in both August and September. During August 2020, 42% of all registrations at the woodland location (SD1) were attributed to Noctule, 38% to Common Pipistrelle, 10% to 'Unidentified Big Bat', 5% to Soprano Pipistrelle, 4% to *Myotis* species and <1% to Long-eared bat species. At the eastern field boundary (SD2), 60% of registrations were attributed to Common Pipistrelle, 22% to Noctule, 7% to *Myotis* species, 6% to Soprano Pipistrelle, 4% to 'Unidentified Big Bat' and <1% for Long-eared bat and unidentified *Pipistrellus* species.

5.3.12 During the second survey period in September 2020, 65% of registrations at SD1 were attributed to 'Unidentified Big Bat', 29% to Noctule, 4% to Common Pipistrelle, 1% to *Myotis* species and Soprano Pipistrelles, and less than 1% to Long-eared species. At

SD2, 43% of registrations were attributed to Noctule, 19% to Soprano Pipistrelle, 14% to Common Pipistrelle, 13% to Long-eared Bat, 6% to 'Unidentified Big Bat', 4% to *Myotis* species, and less than 1% to Nathusius' Pipistrelle.

- 5.3.13 The average number of registrations per hour shows that the majority of species at the two locations recorded less than 1 registration per hour of the survey. In August 'Common Pipistrelle' and 'Noctule' recorded more than 1 registration per hour at SD2. In September, 'Noctule' exceeded 1 registration per hour at both SD1 and SD2, as well as 'Unidentified Big Bat' at SD1 and 'Soprano Pipistrelle' at SD2. Only Common Pipistrelle in August 2020 at SD2 and unidentified 'big bat' at SD1 in September 2020 recorded more than 5 registrations per hour.

Evaluation

Roosting

Trees

- 5.3.14 A number of trees are present within and adjacent to the Site which provide potential opportunities for roosting bats and are largely associated with the hedgerows and treelines. Three trees of low bat roosting potential and one tree of moderate bat roosting potential were recorded adjacent to the Site. A further four trees were identified within the Site boundary of which one was recorded to offer low bat roosting potential, two were recorded to offer moderate bat roosting potential and one was recorded to offer high bat roosting potential. The Site is considered to be of Site level value to roosting bats based on the survey work undertaken to date.

Foraging / Commuting²⁷

- 5.3.15 The manual activity survey recorded low to moderate levels of activity across the Site associated with linear habitats (particularly hedgerows H8, H7 and H3) and woodland as shown at Plan 5903/ECO4. At least five species were recorded comprising Common Pipistrelle, Soprano Pipistrelle, *Myotis* sp., Noctule and 'Big Bat' (those that could be attributed to Serotine *Eptesicus serotinus* or Leisler's Bat *Nyctalus leisleri*) species. Higher levels of activity were recorded in September than that recorded in August.
- 5.3.16 Overall, a minimum of seven species were recorded and general activity levels are considered to be low (at largely less than 1 registration per hour for most species across the Site), with only location SD1 in September and location SD2 in August recording more than five registrations per hour for 'big bat' species and Common Pipistrelle respectively. This indicates a lack of sustained foraging activity for the most part, and as such the linear features within and adjacent to the Site appear likely to be used to a greater extent for commuting. These low levels of activity reflect the largely open nature of the Site set in an arable and suburban context.
- 5.3.17 Of some note are the small number of passes of Nathusius' Pipistrelle at SD 2 within the Site. This bat species is rare in the UK, though records have increased in recent years following targeted national studies.

²⁷ The valuation of foraging and commuting habitat is based broadly on the approach described in: Wray S, Wells D, Long E & Mitchell-Jones T (2010) 'Valuing bats in ecological impact assessment', In Practice, No. 70, Institute of Ecology and Environmental Management

5.3.18 Overall, it is considered the Site is of importance for foraging and commuting bats at the local level.

5.4 Badger

5.4.1 **Legislation.** Badger receive legislative protection under the Protection of Badgers Act 1992 (see Appendix 5903/3 for detailed provisions), and as such should be assessed as an important ecological feature. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It is the duty of planning authorities to consider the conservation and welfare impacts of development upon Badger and issue permissions accordingly.

5.4.2 Licences can be obtained from Natural England for development activities that would otherwise be unlawful under the legislation. Guidance on the types of activity that should be licensed is laid out in the relevant best practice guidance.^{28, 29}

5.4.3 **Background Records.** Three records of Badger were returned by TVERC from within or adjacent to the Site whilst several further records were returned from within the wider search area, although specific locations were not provided. Two of the records that potentially place Badger within the Site boundary are dated from 2010 with the most recent record from 2019.

5.4.4 **Third-party Survey Results.** The central and eastern sections of the Site in addition to a much wider area to the south, were previously surveyed for Badger in May and October 2010 by a third-party consultancy³⁰ to inform an alternative planning application. A number of Badger setts were recorded within their site, largely off-Site, although some use of the woodland within the Site was recorded.

5.4.5 **2020 Survey Results and Evaluation.** No Badger setts or other signs of Badger activity were recorded within the Site during the survey work undertaken in May 2020.

5.4.6 In terms of foraging, habitats within the Site provide some suitable opportunities for Badger, in the form of long-sward grassland and woodland. It is therefore considered likely that Badger within the local area have the potential to use the Site for foraging and commuting. The Site supports areas of densely vegetated habitats, such as the areas of woodland, which could support Badger, the detectability of the species within such areas is reduced.

5.4.7 Based on the above, despite no signs of Badger being found during the May 2020 survey, it does not rule out the possibility of Badger making use of the Site in areas of limited access to surveyors, particularly given the records in the local area. Nonetheless the Site is not considered to be of particularly elevated value for Badger in the local context, but may form part of a Badger territory within the wider area. Badger are a common and widespread species and as such the Site is considered to be of value to Badger at the Site level.

²⁸ English Nature (2002) 'Badgers and Development'

²⁹ Natural England (2011) 'Badgers and Development: A Guide to Best Practice and Licensing', Interim Guidance Document

³⁰ Hyder Consulting (February 2014) 'North West Bicester Eco development. Technical Appendix 6A to 6I. Ecology Surveys'

5.5 Otter

- 5.5.1 **Legislation:** Otter is fully protected under the Wildlife and Countryside Act 1981 (as amended) and is a European Protected Species under the Conservation of Habitats and Species Regulations 2010 (as amended). Such legislation affords protection to individuals of the species and their breeding sites and places of rest (see Appendix 5903/3 for detailed provisions). Otter is also a S41 Priority Species.
- 5.5.2 **Background Records:** No specific records of Otter within the Site or from within a 2km radius of the Site were returned from the desktop study.
- 5.5.3 **Third-party Survey Results.** Appropriate habitat within the central and eastern sections of the Site in addition to a much wider area to the south, was previously surveyed for Otter by a third-party consultancy in June and August 2010. No signs of Otter were recorded and it was concluded that the area offered limited value to Otter.
- 5.5.4 **2020 Survey Results:** The Phase 1 habitat survey identified that watercourses along sections of the southern and eastern boundaries of the Site that could provide limited potential opportunities for Otter, both as corridors for movement and as foraging areas, although the watercourses were recorded to be dry for a large proportion of the year. Areas of dense vegetation may also provide lying up sites for this species. As such a targeted Otter survey was carried out of all watercourses in/adjacent to the Site and immediate surrounds.
- 5.5.5 Otter surveys were conducted along WC1 and WC2 in June and September 2020. The targeted surveys did not record any evidence of Otter along either watercourse.
- 5.5.1 **Evaluation.** Otter do not appear to be making use of watercourses within the Site. The lack of evidence recorded concurs with the desk study records and previous survey work undertaken in the local area, which also did not return any records of Otter within the vicinity of the Site. The watercourses were noted to be dry or hold a very shallow level of water for much of the year such that it is considered these features are likely sub-optimal for the species.
- 5.5.2 No evidence of Otter holts or lying-up sites were recorded, and as such given the survey evidence it appears that the watercourses within and adjacent to the Site are not being used by Otter as movement corridors or foraging habitat. Overall the Site is considered to be of negligible value for Otter.

5.6 Water Vole

- 5.6.1 **Legislation:** Water Vole is fully protected under the Wildlife and Countryside Act 1981 (as amended). Water Vole is also a S41 Priority Species. The legislation affords protection to individuals of the species and their breeding sites and places of shelter (see Appendix 5903/3 for detailed provisions).
- 5.6.2 **Background Records:** No records of Water Vole within or adjacent to the Site were returned from the desktop study. A small number of records of Water Vole were returned from the surrounding search area, associated with Bure Park Local Nature Reserve, located approximately 0.8km south of the Site, although this is historical in nature, dated 1999.

- 5.6.3 **Third-party Survey Results.** Appropriate habitat within the central and eastern sections of the Site in addition to a much wider area to the south, was previously surveyed for Water Vole in June and August 2010 by a third-party consultancy. No evidence of or signs of Water Vole were recorded during the survey work undertaken.
- 5.6.4 **2020 Survey Results.** The Phase 1 habitat survey identified that watercourses within/adjacent to the Site, comprising shallow sloping earth banks and a limited amount of emergent and aquatic vegetation, provide limited potential opportunities for Water Vole. As such, these watercourses were subject to a targeted Water Vole survey in conjunction with the Otter surveys detailed above, in June and September 2020. The survey work undertaken did not record any evidence of Water Vole.
- 5.6.5 **Evaluation.** Given the lack of Water Vole field signs and the lack of optimal habitat, it is considered unlikely that Water Vole is present along stretches of watercourse within and in close proximity to the Site, whilst it was further noted that the watercourses were dry or held very shallow levels of water for much of the year, reducing the suitability of these features further. Furthermore, the only records of Water Vole in the vicinity of the Site are historical in nature and a single, recent (2019) background record of American Mink *Neovision vision* was also returned from the desktop study from within the surrounding area, although no evidence of this species was recorded on-Site during survey work undertaken. Mink is considered to be an aggressive, non-native predator of species such as Water Vole, such that if Mink are present within the locality it is less likely that a Water Vole population will also persist in the local area. As such, the Site is considered to be of negligible value for Water Vole.

5.7 Dormouse

- 5.7.1 **Legislation:** Dormouse *Muscardinus avellanarius* are fully protected under the Wildlife and Countryside Act 1981 (as amended) and is a European Protected Species under the Conservation of Habitats and Species Regulations 2010 (as amended). Such legislation affords protection to individuals of the species and their breeding sites and places of rest (see Appendix 5903/3 for detailed provisions). Dormouse is also a S41 Priority Species.
- 5.7.2 **Background Records:** No records of Dormouse were returned from the desktop study.
- 5.7.3 **Third-Party Consultancy Results.** Appropriate habitat within the central and eastern sections of the Site (the on-Site woodland), in addition to a much wider area to the south, was previously surveyed for Dormouse between May - October 2010 by a third party consultancy. Dormouse tubes were deployed and a nut search was also undertaken in October 2010. No evidence of Dormouse presence within the survey area was recorded.
- 5.7.4 **2020 Survey Results and Evaluation:** Hedgerows, woodland and small areas of scrub present within the Site offer limited potential opportunities for Dormouse. However, no records of Dormouse have been returned from background records within 2km of the Site, and survey work previously undertaken in 2010 returned no evidence of Dormouse on-Site or in the surrounding area. Hazel was recorded to be absent from the majority of potentially suitable habitat on-Site and a number of hedgerows, particularly associated with the arable field, are subject to annual flailing. Cutting is known to drastically reduce the availability of flowers and fruits. On this basis, a large proportion of flowers and fruits are likely to be removed from the hedgerows as a

result of such intensive management regimes and therefore it is considered unlikely these features would provide a sufficient food resource for Dormouse throughout the year. It is considered unlikely that Dormouse have colonised the Site since previous survey work was undertaken within the woodland and suitable habitat is limited, as such further survey work in regards to Dormouse was not considered necessary and the Site is considered to be of negligible ecological importance to the species.

5.8 Other Mammals

5.8.1 Legislation. A number of other UK mammal species do not receive direct legislative protection relevant to development activities but may receive protection against acts of cruelty (e.g. under the Wild Mammals (Protection) Act 1996). In addition, a number of these mammal species are S41 Priority Species.

5.8.2 Background Records. No specific records of other mammals from within or adjacent to the Site were returned from the desktop study from within the 2km search radius surrounding the Site. A small number of records of UK Priority Species were returned from within the search radius including Hedgehog *Erinaceus europaeus*, the closest record of which was located 0.4km south of the Site, dated 2012. A single record of Brown Hare *Lepus europaeus* was returned from the desktop study, approximately 1.4km west of the Site, dated 2010 and several records of Polecat *Mustela putorius*, the closest of which is approximately 0.9km north of the Site, dated 2015, were also returned.

5.8.3 Third-Party Survey Result. No specific third-party surveys were undertaken for other mammals, however, during surveys for other European Protected Species conducted by a third-party consultancy in 2010, a single sighting of Brown Hare was recorded within their site boundary.

5.8.4 2020 Survey Results and Evaluation. No evidence of any other protected, rare or notable mammal species was recorded within the Site during the 2020 surveys. A number of common and widespread species including Deer sp., Grey Squirrel *Sciurus carolinensis*, Wood Mouse *Apodemus sylvaticus* and Rabbit *Orytolagus cuniculus* were recorded incidentally during survey work undertaken, however these species do not receive specific legislative protection in a development context.

5.8.5 Due to the habitats present on Site, it is likely that the Site offers foraging opportunities and cover for a number of UK Priority mammal species such as Hedgehog and Polecat. As such, it is considered that the Site is of importance to other mammals at the Site level.

5.9 Birds

5.9.1 Legislation. All wild birds and their nests receive protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in respect of killing and injury, and their nests, whilst being built or in use, cannot be taken, damaged or destroyed. Species included on Schedule 1 of the Act receive greater protection and are subject to special penalties (see Appendix 5903/3 for detailed provisions).

5.9.2 Conservation Status. The conservation importance of British bird species is categorised based on a number of criteria including the level of threat to a species'

population status³¹. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline (>50% over the past 25 years). A number of birds are also S41 Priority Species.

5.9.3 **Background Records.** Information returned from the data search included records of a number of notable bird species from within the search radius, including various species from within a 1km grid square covering the Site. These species include the Red Listed Birds of Conservation Concern (BoCC) species Cuckoo *Cuculus canorus*, Lapwing *Vanellus vanellus*, Linnet *Linaria cannabina*, Redwing *Turdus iliacus* and Curlew *Numenius arquata* and the Amber Listed BoCC species Kestrel *Falco tinnuculus*, Swift *Apus apus*, Redstart *Phoenicurus phoenicurus* and Tawny Owl *Strix aluco*, Snipe *Gallinago gallinago*, Mute Swan *Cygnus olor* and Kingfisher *Alcedo atthis*

5.9.4 Kingfisher and Redwing are also listed as Schedule 1 species under the Wildlife and Countryside Act 1981 (as amended) as are Red Kite *Milvus milvus*, Hobby *Falco Subbuteo* and Barn Owl *Tyto alba* also recorded within the 1km grid square covering the Site.

5.9.5 Lapwing, Cuckoo and Curlew are also listed as UK Priority Species.

5.9.6 **Third-Party Survey Results.** Breeding bird surveys were conducted by two different third-party consultancies in 2010 and 2011 respectively. Wintering bird surveys were also conducted by a third-party consultancy in 2011.

Breeding Bird Survey

5.9.7 Barn Owl was recorded nesting within the woodland within the Site in 2010/2011. Eleven additional species recorded as nesting within the wider third-party consultancy survey area (not specifically within the current Site boundary) including Skylark *Alauda arvensis*, Linnet, Cuckoo, Yellowhammer *Emberiza citrinella*, Yellow Wagtail, Spotted Flycatcher *Muscicapa striata*, Marsh Tit *Poecile palustris*, Starling *Sturnus vulgaris*, Song Thrush *Turdus philomelos*, Lapwing and House Sparrow *Passer domesticus*, all of which are birds of conservation concern (BoCC Red List). A further ten BoCC Amber List species were also recorded.

Wintering Bird Survey

5.9.8 Eleven BoCC4 Red List species were recorded overwintering within the wider third-party consultancy survey area including Skylark, Linnet, Yellowhammer, Herring Gull *Larus argentatus*, Marsh Tit, House Sparrow, Grey Partridge *Perdix perdix*, Starling, Redwing, Song Thrush and Lapwing. Moderate number of Yellowhammer, Skylark, Redwing and Fieldfare were recorded whilst low to moderate number of other bird species of conservation concern were recorded.

5.9.9 No evidence of these species were recorded within the current site boundary, with the exception of Song Thrush as detailed below.

5.9.10 **2020 Survey Results.** The Phase 1 habitat survey identified areas of suitable bird nesting habitat within the Site including hedgerows, trees and scrub, whilst the arable

³¹ Eaton MA, Brown AF, Noble DG, Musgrove AJ, Hearn R, Aebischer NJ, Gibbons DW, Evans A and Gregory RD (2009) 'Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man' British Birds 102, pp.296-341

land may be suitable for ground nesting birds. Several Barn Owl boxes were recorded within the woodlands. Previous survey work within the woodlands (as detailed above) noted that boxes within the woodland had previously been used for Barn Owl but that these had been moved out of the woodland some time ago. As such, it is unclear whether Barn Owl currently make use of the Barn Owl boxes present within the woodland, although no evidence of use by the species has been recorded. A range of notable breeding birds have also been recorded in the local vicinity such that specific up to date breeding bird surveys were undertaken.

- 5.9.11 Several species of bird were observed within the Site during the Phase 1 survey and incidentally during other faunal survey work throughout the year including Wood Pigeon *Columba palumbus*, Jackdaw *Corvus monedula*, Red Kite *Milvus milvus*, Swallow *Hirundo rustica*, Blue Tit *Cyanistes caeruleus*, Chaffinch *Fringilla coelebs*, Blackbird *Turdus merula*, Carrion Crow *Corvus corone*, Song Thrush, Pheasant *Phasianus colchicus*, Greenfinch *Carduelis chloris*, Great Tit *Parus major*, Robin *Erithacus rubecula*, Wren *Troglodytes troglodytes*, Buzzard *Buteo buteo*, Goldfinch *Carduelis carduelis* and Greater Spotted Woodpecker *Dendrocopos major*.
- 5.9.12 Breeding bird surveys are currently being undertaken at the Site, the first was undertaken in June 2020 and the second in April 2021. The results of the June and April surveys can be seen on Plan 5903/ECO5. The third survey is scheduled for May 2021.
- 5.9.13 A total of 27 species were recorded within the Site during the June 2020 and April 2021 surveys, of which 16 species are considered to be breeding or probably breeding, and five considered to be possibly breeding. Species recorded included Wood Pigeon, Great Tit, Chiffchaff *Phylloscopus collybita*, Whitethroat *Sylvia communis*, Blackcap *Sylvia atricapilla*, Wren, Blackbird, Song Thrush, Robin, Chaffinch, Goldfinch, Red-legged Partridge *Alectoris refa*, Greater Spotted Woodpecker, Magpie *Pica pica* Carrion Crow, Blue Tit, Long-tailed Tit *Aegithalos caudatus*, Goldcrest *Regulus regulus*, Dunnock *Prunella modularis*, Linnet, Bullfinch *Pyrrhula pyrrhula* and Grey Heron *Ardea cinerea*. The remaining 6 species were recorded either adjacent to the site, flying over the site, or were represented by non-breeding individuals, including Red Kite, Grey Heron, Jackdaw, Skylark, Starling, and Meadow Pipit *Anthus pratensis*. Activity was dominated by common and widespread species, with activity focussed around the two patches of woodland, Site boundaries and mature hedgerows.
- 5.9.14 BoCC Red list species recorded during the breeding bird surveys include Starling, Song Thrush and Linnet. Amber list species recorded include Dunnock, Meadow Pipit and Bullfinch. Song Thrush is also listed as a UK Priority Species. In addition, Red list species Skylark was recorded in adjacent arable land to the Site, however, no evidence of their presence within the Site was recorded.
- 5.9.15 Updated wintering bird surveys were considered unnecessary given the nature of the Site and previous findings.
- 5.9.16 **Evaluation.** The Site offers the potential for Schedule 1 Listed species Barn Owl to utilise the Barn Owl boxes and on-Site woodland for nesting and the remainder of the Site for foraging and commuting to some degree. The other Schedule 1 species Red Kite was recorded as a flyover only and no evidence of nesting within the Site was recorded. In terms of breeding birds generally, based on two survey visits, the Site does not appear to be of particularly elevated value, however until all breeding bird surveys have been completed a full assessment of the importance of the Site for breeding birds cannot be made. Full details and plans will be provided in the update

report that will be issued following the May 2021 survey. In the interim, on a precautionary basis, it is considered that the Site is of importance to breeding birds at the Local level.

5.10 Reptiles

5.10.1 Legislation. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which protects individuals against intentional killing or injury. Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* receive additional protection under the Conservation of Habitats and Species Regulations 2010 (as amended); refer to Appendix 5903/3 for detailed provisions. All six reptile species are also S41 Priority Species.

5.10.2 Background Records. No background records were returned for reptiles within the Site or adjacent to the Site boundary. The closest record was of a Common Lizard *Zootoca vivipara*, dated 2017, located approximately 1.1km south-east of the Site, whilst a single record of Grass Snake *Natrix natrix*, dated 2003, was also returned approximately 1.8km south-west of the Site.

5.10.3 Third-party Survey Results. Reptile presence/absence surveys were conducted during 2010 by a third-party consultancy and found small numbers of Common Lizard within their wider site.

5.10.4 2020 Survey Results. The 2020 Phase 1 habitat survey identified areas of suitable reptile habitat, largely comprising grassland fields, within the Site, including the grassland fields, particularly where a long-sward height was recorded and the arable field margins. Specific survey work for reptiles was undertaken at the Site during September 2020, the results of which are summarised in Table 5.5 below.

Table 5.5: Reptile survey results summary. *BF0 = calm, BF12 = hurricane force*

| Visit | Date | Common Lizard | | Slow Worm | | Grass Snake | | Other Species |
|-------------------|------------|---------------|-----|-----------|-----|-------------|-----|--------------------------------------|
| | | Adult | Juv | Adult | Juv | Adult | Juv | |
| 1 | 02/09/2020 | 4 | 0 | 0 | 0 | 0 | 0 | Common Frog, Common Toad, Wood Mouse |
| 2 | 07/09/2020 | 2 | 0 | 0 | 0 | 0 | 0 | Common Frog, Common Toad, Wood Mouse |
| 3 | 14/09/2020 | 1 | 0 | 0 | 0 | 1 | 0 | Common Toad |
| 4 | 18/09/2020 | 3 | 0 | 0 | 0 | 0 | 0 | Common Toad |
| 5 | 21/09/2020 | 0 | 0 | 0 | 0 | 0 | 0 | - |
| 6 | 24/09/2020 | 1 | 1 | 0 | 0 | 0 | 0 | Common Toad, Wood Mouse |
| 7 | 29/09/2020 | 0 | 0 | 0 | 0 | 0 | 0 | Common Toad, Wood Mouse |
| Peak Count | | 4 | | 0 | | 1 | | |

5.10.5 Small numbers of Common Lizard were recorded during the survey, as well as a single adult Grass Snake, as shown on Plan 5903/ECO6.

5.10.6 Evaluation. A peak count of four Common Lizard and one Grass Snake are present within the Site and such species appear to be utilising the grassland habitats, limited

to fields F1, F2, F3 and F7 only. Under standard guidance³², populations of both species would be classed as low. Due to the low numbers recorded of the two species, it is considered the Site is of value for reptiles at the Local level only.

5.11 Amphibians

5.11.1 Legislation. All British amphibian species receive a degree of protection under the Wildlife and Countryside Act 1981 (as amended). Great Crested Newt is protected under the Act and is also classed as a European Protected Species under the Conservation of Habitats and Species Regulations 2010 (as amended). As such, both Great Crested Newt and habitats utilised by this species are afforded protection (see Appendix 5903/3 for detailed provisions). Great Crested Newt is also a S41 Priority Species, as are Common Toad *Bufo bufo*, Natterjack Toad *Epidalea calamita*, and Pool Frog *Pelophylax lessonae*.

5.11.2 Background Records. Two records of Great Crested Newt were returned from the desktop study. Both records are over 1km from the Site, to the west (1.3km) and south (1km). Additional records of amphibians including Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris* were also returned from the 2km search radius. No records of amphibians on or adjacent to the Site were returned from the local record centre.

5.11.3 Third-party Survey Results. Great Crested Newt surveys were carried out by a third-party consultancy in May 2010. Populations of Great Crested Newts were found to be present within four ponds, three of which were over 500m from the boundary of the wider development area, and fall beyond the 250m of the current Site boundary.

5.11.4 2020 Survey Results. The 2020 survey recorded a single dry pond (P1) within the Site boundary that does not appear to have held water recently and one pond, P2, recorded within 250m of the Site boundary, approximately 20m from the Site boundary at its closest point. An initial appraisal of the ponds was made using the HSI system to identify potential suitability to support Great Crested Newt, see Table 5.6, below.

Table 5.6. HSI survey results.

| Pond | Suitability Indices | | | | | | | | | | HSI Score | Suitability |
|------|---------------------|-------------------|---------------------|-----------------------|---------------|--------------------|--------------|---------------|-----------------------------|----------------------|-------------|---------------|
| | SI 1 Location | SI 2 Pond Area | SI 3 Pond Drying | SI 4 Water Quality | SI 5 Shade | SI 6 Water Fowl | SI 7 Fish | SI 8 Ponds | SI 9 Terrestrial Habitat | SI 10 Macrophytes | | |
| P2 | 1 | 0.1 | 0.5 | 0.33 | 1 | 1 | 1 | 0.65 | 1 | 0.4 | 0.58 | Below Average |

5.11.5 The HSI assessment calculates that pond P2 has a below average suitability to support Great Crested Newt, however given that some records have been returned from the local area and suitable terrestrial habitat is present on Site, an eDNA survey was

³² Herpetofauna Groups of Britain and Ireland (1998) 'Evaluating local mitigation/translocation programmes: Maintaining Practice and lawful standards'

conducted on the pond. The results of the eDNA survey were negative for Great Crested Newt.

- 5.11.6 **Evaluation.** The survey results indicate Great Crested Newts are unlikely to be present within the Site or within waterbodies within 250m. Common Frog and the UK Priority Species Common Toad were recorded during survey work undertaken at the Site. As such the Site is considered to be of negligible value for Great Crested Newt and of value at the Site level for common amphibians.

5.12 Invertebrates

- 5.12.1 **Legislation.** A number of invertebrate species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition, Large Blue Butterfly *Maculinea arion*, Fisher's Estuarine Moth *Gortyna borelii lunata* and Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus* receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended). A number of invertebrates are also listed as S41 Priority Species, such as Brown Hairstreak *Thecla betulae*.

- 5.12.2 **Background Records.** No specific records of invertebrates were returned from within or adjacent to the Site. A small number of invertebrate records were returned within 2km including Lobe-spurred Furrow Bee *Lasioglossum pauxillum*, Large Black Slug *Arion ater* and UK Priority Species Small Heath *Coenonympha pamphilus* and Grizzled Skipper *Pyrgus malvae*.

- 5.12.3 **Third-party Survey Results.** General invertebrate surveys were conducted across the wider third-party survey area in 2010. Surveys conducted included sweep netting, beating trees/bushes, suction sampling, pitfall trapping and actinic light trapping. The 2010 surveys did not record any invertebrates that are protected by UK or European legislation. A single UK Biodiversity Action Plan Priority Species (also a species of conservation concern) was recorded, Small Heath Butterfly *Coenonympha pamphilus*, with only a few individuals recorded. Additionally eight moth species of conservation concern (Section 41 NERC Act species), five nationally scarce (Nationally Notable-NB) invertebrates and 21 Nationally Local invertebrates were recorded during survey work undertaken.

- 5.12.4 Targeted invertebrate surveys were carried out in 2011 for the Barberry Carpet Moth *Pareulype berberata* and the Brown Hairstreak Butterfly. The Barberry Carpet Moth was surveyed using the Bignell Pattern Beating Tray techniques, whilst an egg search of Blackthorn was conducted for the Brown Hairstreak. Brown Hairstreak eggs were identified during the targeted surveys confirming the presence of this species within the third-party wider survey area. Despite confirmed presence of Barberry shrubs, the associated Barberry Carpet Moth was not found to be present.

- 5.12.5 Aquatic invertebrate surveys were also undertaken, specifically for White-clawed Crayfish *Austropotamobius pallipes* and other aquatic invertebrates also. Survey results confirmed the presence of Signal Crayfish *Pacifastacus leinusculus* within the River Bure catchment (sample area outside of Site boundary), and no evidence of White-clawed Crayfish was recorded. Other aquatic invertebrate species recorded were relatively common and widespread and no species of conservation concern were recorded.

- 5.12.6 **2020 Survey Results.** Specific survey work for aquatic invertebrates was not undertaken given that no main watercourses were present within the Site, and

previous survey work did not recorded any notable species. The presence of Signal Crayfish in the area is a clear indication that White-Clawed Crayfish, not recorded in previous survey work, are likely absent such that further survey work for this species is also not considered necessary. General terrestrial invertebrate surveys were also considered unnecessary given the survey work previously undertaken.

5.12.7 However, a targeted invertebrate survey was carried out in December 2020 for the Brown Hairstreak butterfly given that the Site supports numerous hedgerows with a high proportion of Blackthorn. Brown Hairstreak use Blackthorn exclusively to lay their eggs on and the species is used as a food plant by their larvae. In addition to searching for Brown Hairstreak eggs upon Blackthorn, an assessment of hedgerow/treeline/woodland edge suitability for Brown Hairstreak egg laying opportunities was also undertaken. The results of the survey work undertaken are shown on Plan 5903/ECO7 and set out in Table 5.7 below.

Table 5.7 Brown Hairstreak Survey Results

| Habitat Feature* | Blackthorn Present (Y/N) | Hedgerow Length (m) | Blackthorn (%) | Suitable** Blackthorn (%***) | Habitat Quality# | No. of Brown Hairstreak Eggs | Additional Observations |
|------------------|--------------------------|---------------------|----------------|------------------------------|------------------|------------------------------|---|
| H1 | N | 78 | - | - | Unsuitable | 0 | No Blackthorn recorded |
| H2 | N | 46 | - | - | Unsuitable | 0 | No Blackthorn recorded |
| H3 | Y | 220 | 40 | 40 | High | 4 | No sign of recent management |
| H4 | Y | 254 | 10 | 60 | Low | 1 | Gappy in nature |
| H5 | N | 113 | - | - | Unsuitable | 0 | No Blackthorn recorded |
| H6 | Y | 265 | 40 | 50 | High | 3 | No sign of recent management |
| H7 | Y | 123 | 20 | 35 | Medium | 3 | Thin, sparse, not recently managed |
| H8 | Y | 360 | 80 | 30 | High | 1 | Not recently managed |
| H9 | Y | 78 | 55 | 10 | Medium | 0 | Recently flailed |
| H10 | Y | 152 | 75 | <5 | Low | 0 | Recently flailed, no new growth |
| H11 | Y | 185 | 10 | <5 | Low | 0 | Flailed edge |
| H12 | N | 32 | - | - | Unsuitable | 0 | No Blackthorn recorded |
| TL1 | N | 36 | - | - | Unsuitable | 0 | No Blackthorn recorded |
| TL2 | N | 89 | - | - | Unsuitable | 0 | No Blackthorn recorded |
| TL3 | Y | 142 | 10 | <5 | Unsuitable | 0 | |
| TL4 | Y | 254 | 40 | 20 | Medium | 0 | |
| W1 | N | 158 | - | - | Unsuitable | 0 | No Blackthorn recorded at woodland edge |
| W2 | Y | 317 | 5 | 10 | Low | 0 | - |

| | | | | | | | |
|----|---|---|----|----|-----|---|--------------------------------------|
| S1 | Y | 4 | 10 | 80 | Low | 1 | Bramble patch with single Blackthorn |
|----|---|---|----|----|-----|---|--------------------------------------|

* H = Hedgerow, TL = Treeline, W = Woodland Edge, S = Scrub

** Suitable Blackthorn includes suckers at the edges of bushes/hedgerows and/or fresh young growth (1-2yr old) located 0.25-1.75m off the ground

***as a percentage of total Blackthorn present

#Habitat quality defined by percentage of Blackthorn and the percentage of that which is young and not significantly damaged

5.12.8 A total of 13 eggs were identified across the Site, confirming the presence of this species within the Site (see Plan 5903/ECO7). Eggs were identified on four on-Site hedgerows, one off-Site hedgerow and a single patch of scrub.

Evaluation

5.12.9 The survey results indicate that the Site is likely used by largely common and wide-spread species, as well as the UK Priority Species Brown Hairstreak. Third-party invertebrate surveys from 2010 recorded UK Priority Species, species listed under Section 41 of the NERC Act as well as nationally scarce and Nationally Local Invertebrates within their site boundary. Targeted invertebrate surveys from 2011 also confirmed presence for the Brown Hairstreak butterfly within their boundary.

5.12.10 A small number of common butterfly species were observed during the Phase 1 survey of the Site in 2020 including Small Tortoiseshell *Aglais urticae*, Small White *Pieris rapae*, Peacock *Aglais io*, Large White *Pieris brassicae*, Small Blue *Cupido minimus*, and Meadow Brown *Maniola jurtina*. The UK Priority Species Brown Hairstreak was confirmed present on Site during the December 2020 survey.

5.12.11 The Brown Hairstreak butterfly is a UK Priority Species and its confirmed presence within the Site, during both the 2011 and 2020 surveys, is of local importance due to a nationally declining population in recent years, largely attributed to inappropriate management of Blackthorn, such as winter flailing.

5.12.12 Overall, the Site is considered to be of negligible ecological value to common invertebrates. However, the Site has been recorded to support a number of hedgerows, treelines, woodland edges and areas of scrub which support Blackthorn. Of these habitat features hedgerows H3, H6 and H8 were considered to be of high suitability for Brown Hairstreak whilst hedgerow H7, H9 and TL4 were considered to offer moderate suitability and H4, woodland W2 edge, and scrub patch S1 were considered to offer low suitability. The suitability of hedgerows is largely constrained by the presence and amount of Blackthorn, connectivity and level/type of management received. Brown Hairstreak eggs were identified upon hedgerows H3, H4, H6,H7, H8 and scrub S1 whilst there is potential for other hedgerows identified as offering suitability to also support the species. Given the above, Brown Hairstreak is considered to form an important ecological feature at the Local level.

5.13 Summary

5.13.1 On the basis of the above, the fauna within the Site which are considered to form important ecological features and will therefore be considered in the ES are shown in Table 5.7 below.

Table 5.7: Summary of faunal evaluation.

| Species / Group | Level |
|-------------------------------|--|
| Bats - roosting (trees) | Site |
| Bats - foraging and commuting | Likely Local (tbc following completion of survey work) |
| Badger | Site |
| Other Mammals | Site |
| Birds | Likely Local (tbc following completion of survey work) |
| Reptiles | Local |
| Common Amphibians | Site |
| Brown Hairstreak | Local |

5.13.2 Additional faunal groups discussed above, such as Otter, Water Vole, Dormouse, Great Crested Newts, and invertebrates are considered unlikely to form important ecological features at the Site and will not be considered in the ES.

6 Summary and Conclusions

6.1.1 Aspect Ecology has carried out a preliminary baseline ecological appraisal of the Land at North West Bicester, based on the results of desktop study, extended Phase 1 habitat and faunal surveys. The Site was most recently subject to a Phase 1 Habitat Survey in May 2020. Specific surveys have been conducted in respect of bats, Badger, Otter, Water Vole, breeding birds, reptiles, Great Crested Newt and Brown Hairstreak butterfly throughout 2020 and 2021. This report sets out the findings of the survey work undertaken within the Site and identifies important ecological features which will be assessed in the Environmental Statement.

Ecological Designations

6.1.2 The Site is not subject to any statutory or non-statutory ecological designations. Bure Park Local Nature Reserve (LNR) lies approximately 0.7km south of the Site. The next nearest statutory designation is Ardley Cutting & Quarry SSSI, approximately 1.3km west of the Site. The Site falls within the SSSI Impact Risk Zone (IRZ) of Ardley Cutting & Quarry SSSI, however the IRZ does not list residential development as a risk factor to the SSSI. The closest international designation is Oxford Meadows Special Area of Conservation (SAC) lies approximately 17.1km to the south west of the Site. The closest non-statutory designation is Twelve Acre Copse Oxfordshire Local Wildlife Site (LWS) located approximately 1.1km north-west of the Site.

Habitats

6.1.3 The Site is dominated by grassland and arable with hedgerows and treelines forming sections of the Site boundaries. Two watercourses runs adjacent to the south-eastern and south-western boundaries. A summary of the habitats present within the Site which are considered to form important ecological features is set out in Table 6.1 below.

Table 6.1 Important ecological features - habitats.

| Habitat | Level |
|-------------------------|-------|
| Semi-improved Grassland | Site |
| Hedgerows and Treelines | Local |
| Scattered Trees | Site |
| Woodland | Local |
| Watercourse | Local |

Fauna

6.1.4 Specific faunal surveys have been undertaken at the Site in respect of bats, Badger, Otter, Water Vole, breeding birds, reptiles, Great Crested Newt and Brown Hairstreak. Further survey work is scheduled for May 2021 in regards to bats and breeding birds in order to conclude the importance of the Site for these species. A summary of faunal species supported by or associated with the Site which are considered to form important ecological features is given in Table 6.2 below.

Table 6.2 Summary of faunal evaluation.

| Species / Group | Level |
|-------------------------------|--|
| Bats – roosting (trees) | Site |
| Bats - foraging and commuting | Likely Local (tbc following completion of survey work) |
| Badger | Site |
| Other Mammals | Site |
| Birds | Likely Local (tbc following completion of survey work) |
| Reptiles | Local |
| Amphibians | Site |
| Brown Hairstreak | Local |

Conclusion

- 6.1.5 The information in this report provides details of the ecological baseline position within the Site, setting out the habitat types and species present and evaluating their ecological importance in the context of the Site, in order to identify the important ecological features of the Site. Further survey work, scheduled for May 2021, is needed in order to conclude the ecological importance of bats and breeding birds within the Site. The information in this report is considered to provide a sound ecological baseline, which can be utilised to inform the Environmental Statement.

Plan 5903/ECO1:

Site Location



Key:



Site Location

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North West Bicester PROJECT

Site Location TITLE

5903/ECO1 DRAWING NO.

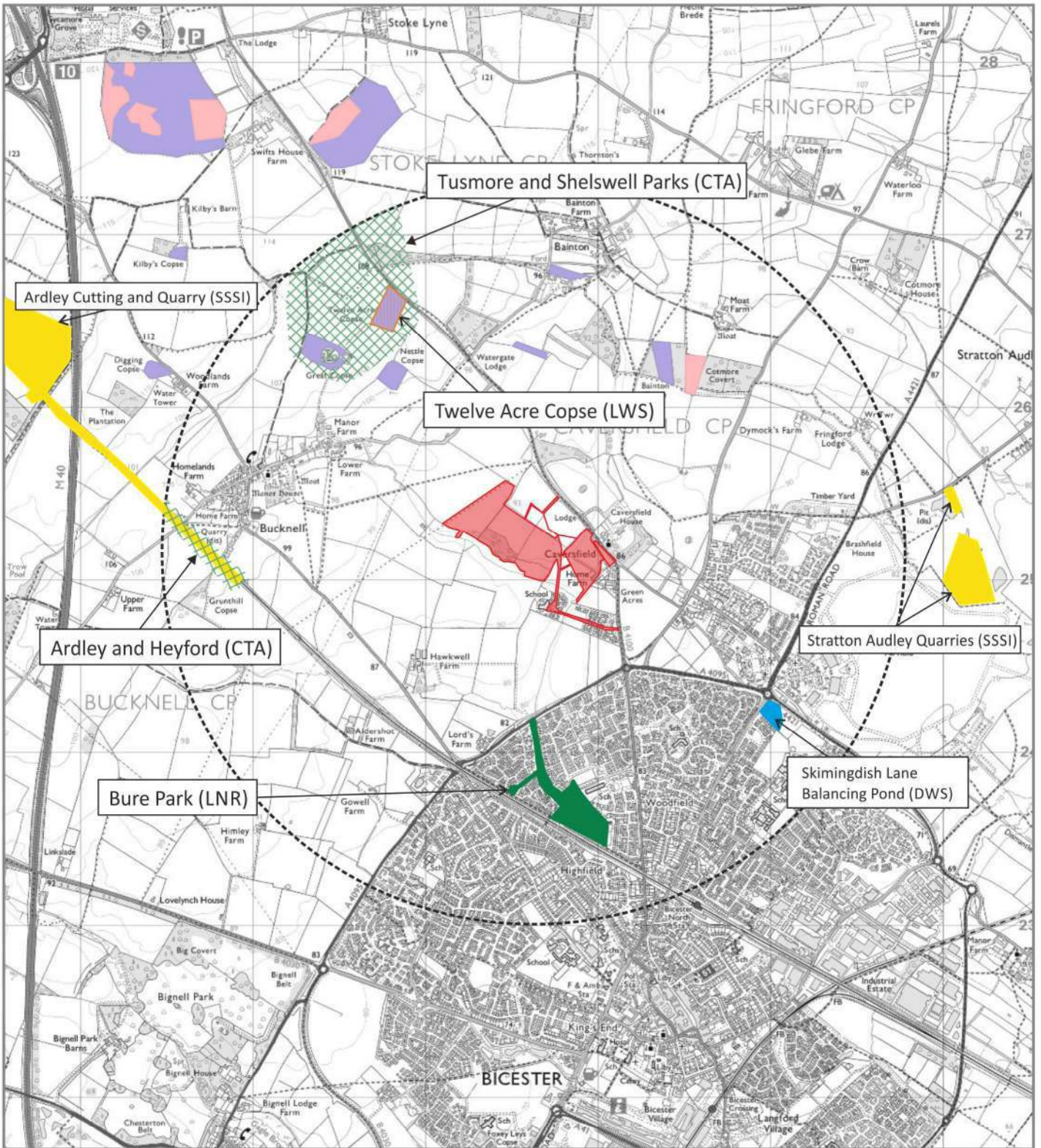
C REV.

March 2021 DATE



Plan 5903/ECO2:

Ecological Designations



Key:

- Site Location
- 2km Buffer
- Conservation Target Area (CTA)
- Site of Special Scientific Interest (SSSI)
- Ancient & Semi-Natural Woodland (ASW)
- Ancient Replanted Woodland (ARW)
- Local Nature Reserve (LNR)
- Local Wildlife Site (LWS)
- District Wildlife Site (DWS)

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Ecological Designations TITLE

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March 2021 DATE



Plan 5903/ECO3:

Habitats, Ecological Features & Photographs



- Key:**
- Site Boundary
 - Semi-improved Long Sward Grassland
 - Semi-improved Short Sward Grassland
 - Hedgerow
 - Tree Line
 - Tree
 - Tree with Low Bat Roosting Potential
 - Tree with Moderate Bat Roosting Potential
 - Tree with High Bat Roosting Potential
 - Brush/Rubble Pile
 - Woodland
 - Scattered Scrub
 - Dense Scrub
 - Dry Ditch
 - Pond
 - Dry Pond
 - Fence
 - Off-Site Watercourse
 - Arable
 - Hardstanding

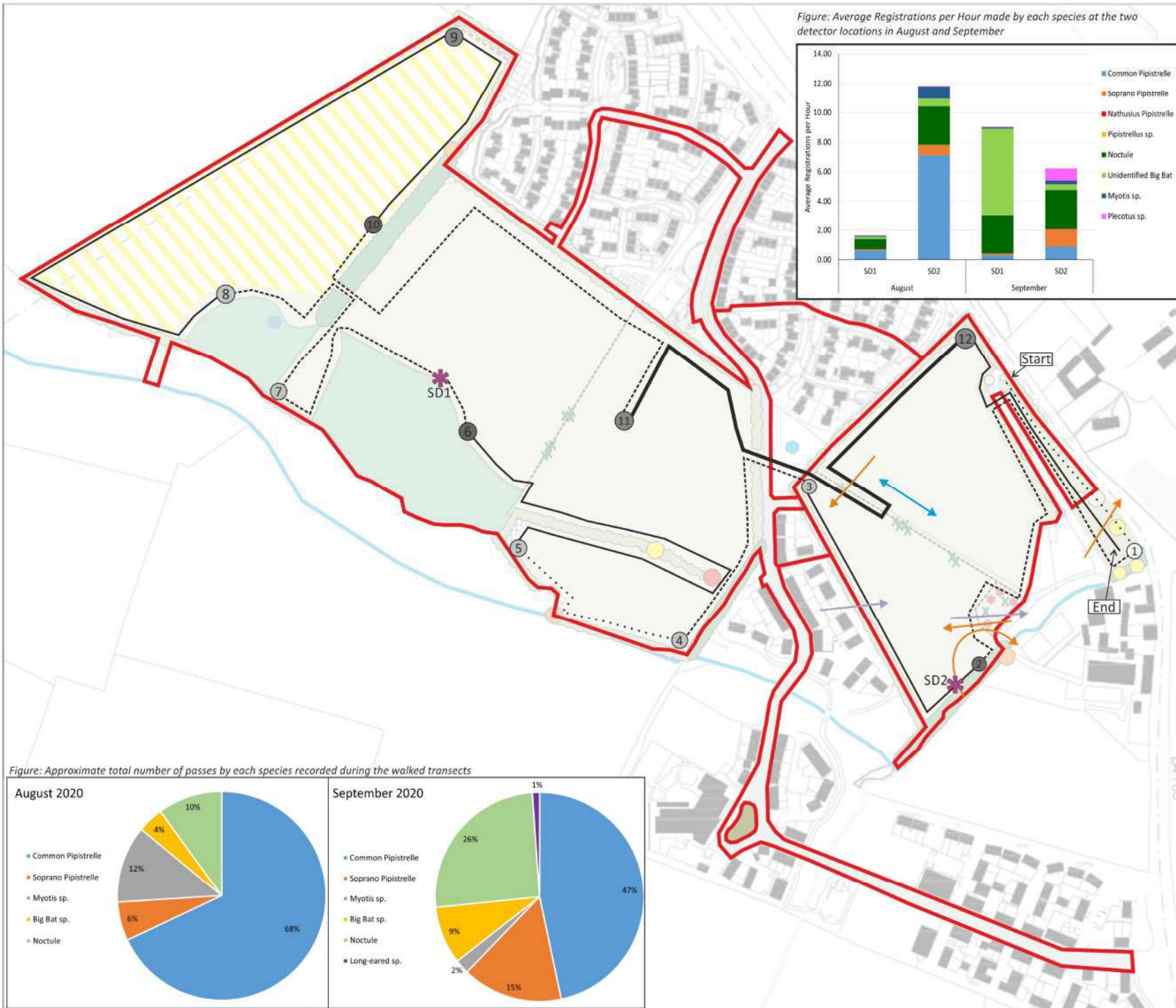
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| | |
|---|-------------|
| North West Bicester | PROJECT |
| Habitats, Ecological Features and Photographs | TITLE |
| 5903/ECO3 | DRAWING NO. |
| C | REV. |
| March 2021 | DATE |

Plan 5903/ECO4:

Bat Survey Results



Key:

- Site Boundary
- Static Detector Location

Species Observed

- Common Pipistrelle
- Soprano Pipistrelle
- 'Big Bat' Species*

Bat Activity Index (av. registrations per minute)

At Listening Points

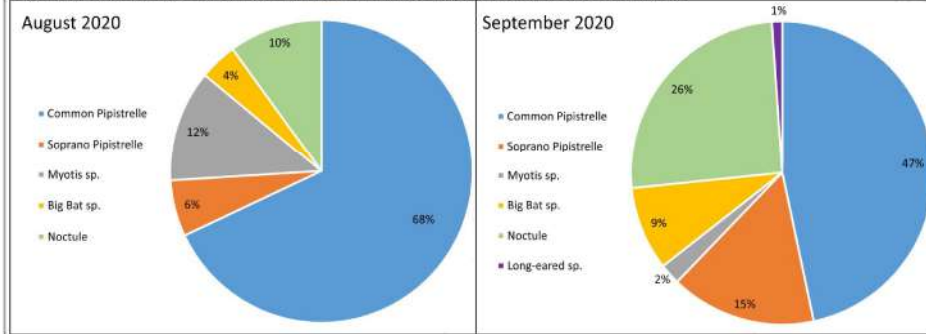
- Negligible Bat Activity (Bat Activity Index 0)
- Low Bat Activity (Bat Activity Index 0.01 - 0.5)
- Moderate Bat Activity (Bat Activity Index 0.51 - 1.0)
- High Bat Activity (Bat Activity Index >1)

Between Listening Points

- Negligible Bat Activity (Bat Activity Index 0)
- Low Bat Activity (Bat Activity Index 0.01 - 0.5)
- Moderate Bat Activity (Bat Activity Index 0.51 - 1.0)
- High Bat Activity (Bat Activity Index >1)

* Big Bat Species - Noctule, Serotine and Leisler's

Figure: Approximate total number of passes by each species recorded during the walked transects



Plan 5903/ECO5:

Breeding Bird Survey Results



- Key:**
- Site Boundary
 - Breeding / Probable Breeding (BOCC Red List)
 - Possible Breeding (BOCC Red List)
 - Breeding / Probable Breeding (BOCC Amber List Species)
 - Breeding / Probable Breeding (BOCC Green List - Not Threatened)
 - Possible Breeding (BOCC Green List - Not Threatened)

- Bird Species Key:**
- Blackbird
 - Black Cap
 - Bullfinch
 - Blue Tit
 - Carrion Crow
 - Chiffchaff
 - Chaffinch
 - Dunnock
 - Goldcrest
 - Goldfinch
 - Great Spotted Woodpecker
 - Great Tit
 - Linnets
 - Long-tailed Tit
 - Magpie
 - Robin
 - Red-legged Partridge
 - Song Thrush
 - Whitethroat
 - Wood Pigeon
 - Wren

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


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|------------------------------|--|-------------|
| North West Bicester | | PROJECT |
| Breeding Bird Survey Results | | TITLE |
| 5903/EC05 | | DRAWING NO. |
| | | REV. |
| April 2021 | | DATE |



Plan 5903/ECO6:

Reptile Survey Results



- Key:**
-  Site Boundary
 -  Reptile Transect
 -  Number of Mats per Transect
 -  Common Lizard Location
 -  Grass Snake Location

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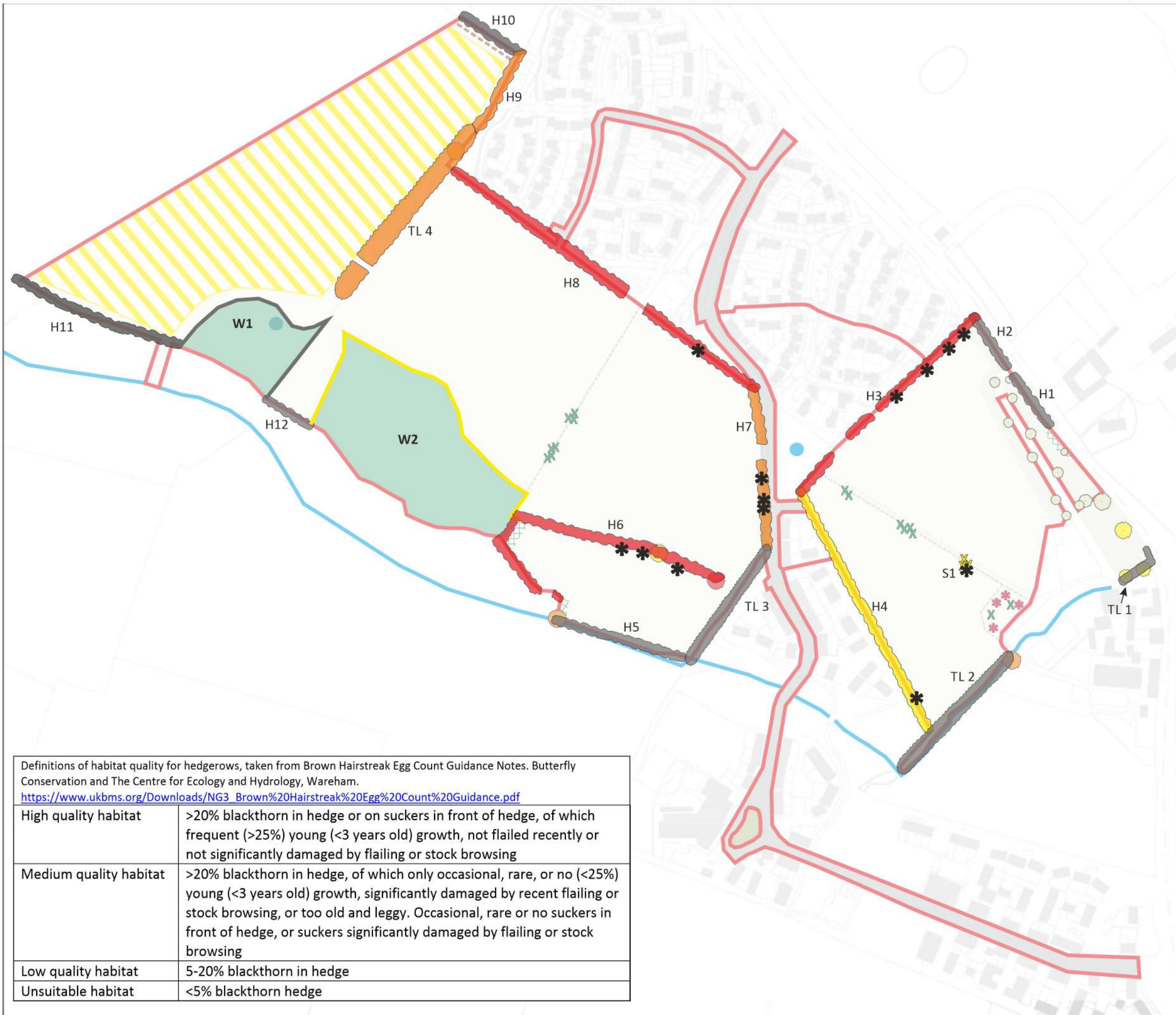
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|------------------------|-------------|
| North West Bicester | PROJECT |
| Reptile Survey Results | TITLE |
| 5903/ECO6 | DRAWING NO. |
| C | REV. |
| March 2021 | DATE |



Plan 5903/ECO7:

Brown Hairstreak Survey Results



Key:

- Site Boundary
- Hedgerow**
 - Unsuitable
 - Low Suitability
 - Medium Suitability
 - High Suitability
- Treeline**
 - Unsuitable
 - Low Suitability
 - Medium Suitability
 - High Suitability
- Woodland Edge**
 - Unsuitable
 - Low Suitability
- Scrub**
 - Low Suitability
- Brown Hairstreak Egg Location

Definitions of habitat quality for hedgerows, taken from Brown Hairstreak Egg Count Guidance Notes. Butterfly Conservation and The Centre for Ecology and Hydrology, Wareham.
https://www.ukbms.org/Downloads/NG3_Brown%20Hairstreak%20Egg%20Count%20Guidance.pdf

| | |
|------------------------|--|
| High quality habitat | >20% blackthorn in hedge or on suckers in front of hedge, of which frequent (>25%) young (<3 years old) growth, not flailed recently or not significantly damaged by flailing or stock browsing |
| Medium quality habitat | >20% blackthorn in hedge, of which only occasional, rare, or no (<25%) young (<3 years old) growth, significantly damaged by recent flailing or stock browsing, or too old and leggy. Occasional, rare or no suckers in front of hedge, or suckers significantly damaged by flailing or stock browsing |
| Low quality habitat | 5-20% blackthorn in hedge |
| Unsuitable habitat | <5% blackthorn hedge |

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North West Bicester PROJECT

Brown Hairstreak Survey Results TITLE

5903/ECO7 DRAWING NO.

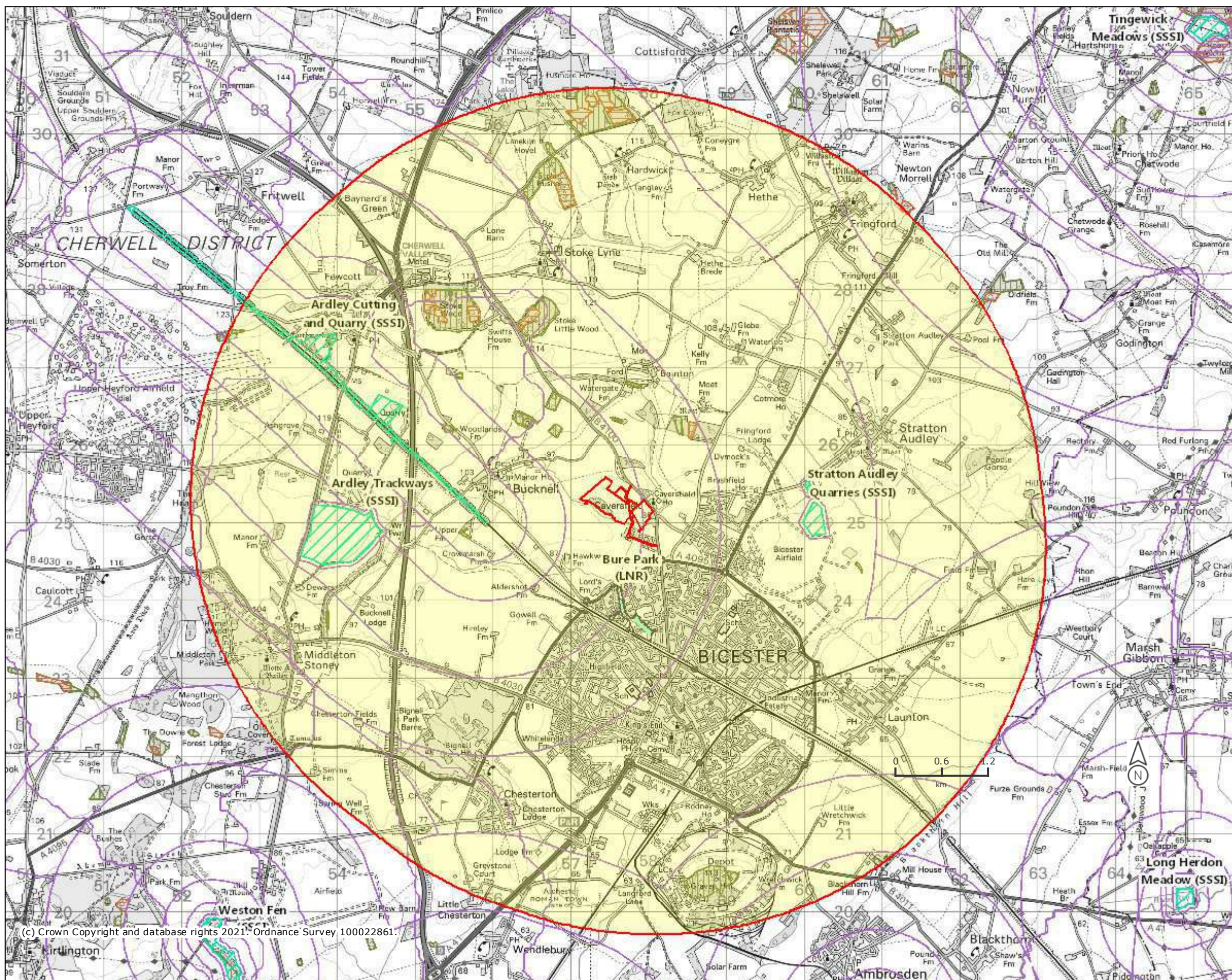
C REV.

March 2021 DATE



Appendix 5903/1:

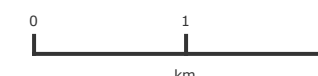
Desktop Study Data



Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  Ramsar Sites (England)
-  Sites of Special Scientific Interest (England)
-  SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
-  Special Areas of Conservation (England)
-  Possible Special Areas of Conservation (England)
-  Special Protection Areas (England)
-  Potential Special Protection Areas (England)
- Ancient Woodland (England)**
-  Ancient and Semi-Natural Woodland
-  Ancient Replanted Woodland

Projection = OSGB36
 xmin = 445000
 ymin = 219200
 xmax = 470400
 ymax = 231600



Map produced by MAGIC on 5 March, 2021.
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Appendix 5903/2:

Evaluation Methodology

Evaluation Methodology

1. The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018)¹.

Importance of Ecological Features

2. Ecological features within the site/study area have been evaluated in terms of whether they qualify as 'important ecological features'. In this regard, CIEEM guidance states that *"it is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable"*.
3. Various characteristics contribute to the importance of ecological features, including:
 - Naturalness;
 - Animal or plant species, sub-species or varieties that are rare or uncommon, either internationally, nationally or more locally, including those that may be seasonally transient;
 - Ecosystems and their component parts, which provide the habitats required by important species, populations and/or assemblages;
 - Endemic species or locally distinct sub-populations of a species;
 - Habitat diversity;
 - Habitat connectivity and/or synergistic associations;
 - Habitats and species in decline;
 - Rich assemblages of plants and animals;
 - Large populations of species or concentrations of species considered uncommon or threatened in a wider context;
 - Plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetation types, including examples of naturally species-poor communities; and
 - Species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.
4. As an objective starting point for identifying important ecological features, European, national and local governments have identified sites, habitats and species which form a key focus for biodiversity conservation in the UK, supported by policy and legislation. These are summarised by CIEEM guidance as follows:

Designated Sites

- Statutory sites designated or classified under international conventions or European legislation, for example World Heritage Sites, Biosphere Reserves, Wetlands of International Importance (Ramsar sites), Special Areas of Conservation (SAC), Special Protection Areas (SPA);

¹ CIEEM (2018) 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine', Chartered Institute of Ecology and Environmental Management, Winchester

- Statutory sites designated under national legislation, for example Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR);
- Locally designated wildlife sites, e.g. Local Wildlife Sites (LWS).

Biodiversity Lists

- Habitats and species of principal importance for the conservation of biodiversity in England and Wales (largely drawn from UK BAP priority habitats and priority species), often referred to simply as Priority Habitats / Species;
- Local BAP priority species and habitats.

Red Listed, Rare, Legally Protected Species

- Species of conservation concern, Red Data Book (RDB) species;
- Birds of Conservation Concern;
- Nationally rare and nationally scarce species;
- Legally protected species.

5. In addition to this list, other features may be considered to be of importance on the basis of local rarity, where they enable effective conservation of other important features, or play a key functional role in the landscape.

Assigning Level of Importance

6. The importance of an ecological feature should then be considered within a defined geographical context. Based on CIEEM guidance, the following frame of reference is used:
 - International (European);
 - National;
 - Regional;
 - County;
 - District;
 - Local (e.g. Parish or Neighbourhood);
 - Site (not of importance beyond the immediate context of the site).
7. Features of 'local' importance are those considered to be below a district level of importance, but are considered to appreciably enrich the nature conservation resource or are of elevated importance beyond the context of the site.
8. Where features are identified as 'important' based on the list of key sites, habitats and species set out above, but are very limited in extent or quality (in terms of habitat resource or species population) and do not appreciably contribute to the biodiversity interest beyond the context of the site, they are considered to be of 'site' importance.
9. In terms of assigning the level of importance, the following considerations are relevant:

Designated Sites

10. For designated sites, importance should reflect the geographical context of the designation (e.g. SAC/SPA/Ramsar sites are designated at the international level whereas SSSIs are designated at the national level). Consideration should be given to multiple designations as appropriate (where an area is subject to differing levels of nature conservation designations).

Habitats

11. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, 'Guidelines for the selection of biological SSSIs' and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat is also an important consideration, for example in the case of ancient woodland.
12. Whether habitats are listed as priorities for conservation at a national level in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Habitats of Principal Importance' or 'Priority Habitats', or within regional or local Biodiversity Action Plans (BAPs) is also relevant, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.
13. Habitat inventories (such as habitat mapping on the MAGIC database) or information relating to the status of particular habitats within a district, county or region can also assist in determining the appropriate scale at which a habitat is of importance.

Species

14. Deciding the importance of species populations should make use of existing criteria where available. For example, there are established criteria for defining nationally and internationally important populations of waterfowl. The scale within which importance is determined could also relate to a particular population, e.g. the breeding population of common toads within a suite of ponds or an otter population within a catchment.
15. When determining the importance of a species population, contextual information about distribution and abundance is fundamental, including trends based on historical records. For example, a species could be considered particularly important if it is rare and its population is in decline. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.
16. Whether species are listed as priorities for conservation at a national level in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Species of Principal Importance' or 'Priority Species', or within regional or local Biodiversity Action Plans (BAPs) is also relevant, albeit the listing of a particular species under a BAP does not in itself imply any specific level of importance.
17. Species populations should also be considered in terms of the potential zone of influence of the proposals, i.e. if the entire species population within the site and surrounding area were to be affected by the proposed development, would this be of significance at a local, district, county or wider scale? This should also consider the foraging and territory ranges of individual species (e.g. bats roosting some distance from site may forage within site whereas other species such as invertebrates may be more sedentary).

Appendix 5903/3:

Legislation Summary

LEGISLATION SUMMARY

1. In England and Wales primary legislation is made by the UK Parliament, and in Scotland by the Scottish Parliament, in the form of Acts. The main piece of legislation relating to nature conservation in the UK is the Wildlife and Countryside Act 1981 (as amended).
2. Acts of Parliament confer powers on Ministers to make more detailed orders, rules or regulations by means of secondary legislation in the form of statutory instruments. Statutory instruments are used to provide the necessary detail that would be too complex to include in an Act itself¹. The provisions of an Act of Parliament can also be enforced, amended or updated by secondary legislation.
3. In summary, the key pieces of legislation relating to nature conservation in the UK are:
 - Wildlife and Countryside Act 1981 (as amended)
 - Protection of Badgers Act 1992
 - Hedgerows Regulations 1997
 - Countryside and Rights of Way (CROW) Act for England and Wales 2000
 - Natural Environment and Rural Communities Act 2006
 - Conservation of Habitats and Species Regulations 2017
4. A brief summary of the relevant legislation is provided below. The original Acts and instruments should be referred to for the full and most up to date text of the legislation.
5. **Wildlife and Countryside Act 1981 (as amended)**. The WCA Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) identified for their flora, fauna, geological or physiographical features. The Act contains strict measures for the protection and management of SSSIs.
6. The Act also refers to the treatment of UK wildlife including protected species listed under Schedules 1 (birds), 5 (mammals, herpetofauna, fish, invertebrates) and 8 (plants).
7. Under Section 1(1) of the Act, all wild birds are protected such that it is an offence to intentionally:
 - Kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird whilst in use* or being built;
 - Take or destroy an egg of any wild bird.

* The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.
8. Offences in respect of Schedule 1 birds are subject to special, i.e. higher, penalties. Schedule 1 birds also receive greater protection such that it is an offence to intentionally or recklessly:
 - Disturb any wild bird included in Schedule 1 while it is building a nest or while it is in, on or near a nest containing eggs or young;
 - Disturb dependent young of such a bird.

¹ <http://www.parliament.uk/business/bills-and-legislation/secondary-legislation/statutory-instruments/>

9. Under Section 9(1) of the Act, it is an offence to:
 - Intentionally kill, injure or take any wild animal included in Schedule 5.
10. In addition, under Section 9(4) it is an offence to intentionally or recklessly:
 - Obstruct access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection; or
 - Disturb any wild animal included in Schedule 5 while occupying a structure or place which it uses for that purpose.
11. Under Section 13(1) it is an offence:
 - To intentionally pick, uproot or destroy any wild plant listed in Schedule 8; or
 - Unless the authorised person, to intentionally uproot any wild plant not included in Schedule 8.
12. The Act also contains measures (S.14) for preventing the establishment of non-native species that may be detrimental to native wildlife, prohibiting the introduction into the wild of animals (releases or allows to escape) and plants (plants or causes to grow) listed under Schedule 9.
13. **Protection of Badgers Act 1992.** The Act aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It should be noted that the legislation is not intended to prevent properly authorised development. Under the Act it is an offence to:
 - Wilfully kill, injure, take, possess or cruelly ill-treat* a Badger, or attempt to do so;
 - To intentionally or recklessly interfere with a sett# (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

* the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence

A sett is defined as “any structure or place which displays signs indicating current use by a Badger”. Natural England advice (June 2009) is that a sett is protected so long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger. Interference with a sett includes blocking tunnels or damaging the sett in any way
14. Licences can be obtained from the Statutory Nature Conservation Organisation (SNCO) for development activities that would otherwise be unlawful under the legislation, provided there is suitable justification. The SNCO for England is Natural England.
15. **Hedgerows Regulations 1997.** ‘Important’ hedgerows (as defined by the Regulations) are protected from removal (up-rooting or otherwise destroying). Various criteria specified in the Regulations are employed to identify ‘important’ hedgerows for wildlife, landscape or historical reasons.
16. **Countryside and Rights of Way (CRoW) Act for England and Wales 2000.** The CRoW Act provides increased measures for the management and protection of SSSIs and strengthens wildlife enforcement legislation. Schedule 12 of the Act amends the species provisions of the WCA 1981, strengthening the legal protection for threatened species. The Act also introduced a duty on Government to have regard to the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

17. **Natural Environment and Rural Communities Act 2006.** Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as local planning authorities, in implementing their duty under Section 40 of the Act, to have regard to the conservation of biodiversity in England, when exercising their normal functions. 56 habitats and 943 species of principal importance are included on the S41 list. These are all the habitats and species in England that were identified as requiring action in the UK Biodiversity Action Plan (BAP).
18. **Conservation of Habitats and Species Regulations 2017 (as amended).** The Regulations enact the European Union's Habitats Directive (92/43/EEC) in the UK. The Habitats Directive was designed to contribute to the maintenance of biodiversity within member states through the conservation of sites, known in the UK as Special Areas of Conservation (SACs), containing habitats and species selected as being of EC importance (as listed in Annexes I and II of the Habitats Directive respectively). Member states are required to take measures to maintain or restore these natural and semi-natural habitats and wild species at a favourable conservation status.
19. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs)² classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites constitute the Natura 2000 network. The Regulations impose restrictions on planning decisions likely to significantly affect SPAs or SACs.
20. The Regulations also provide protection to European Protected Species of animals that largely overlaps with the WCA 1981, albeit the provisions are generally stricter. Under Regulation 43 it is an offence, *inter alia*, to:
 - Deliberately capture, injure or kill any wild animal of a European Protected Species;
 - Deliberately disturb any wild animals of any such species, including in particular any disturbance likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance;
 - Deliberately take or destroy the eggs of such an animal;
 - Damage or destroy a breeding site or resting place of such an animal.
21. Similar protection is afforded to European Protected Species of plants, as detailed under Regulation 47.
22. The Regulations do provide a licensing system that permits otherwise illegal activities in relation to European Protected Species, subject to certain tests being fulfilled.

² Special Protection Areas (SPAs) are protected sites classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC) (aka the Birds Directive), which came into force in April 1979. SPAs are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species.

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