Land West of Turners Hill Road, Crawley Down
(North of Huntsland – 150 dwellings)

Ecological Appraisal

January 2025

Quality Management	
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Executive Summary

i) **Introduction.** Aspect Ecology has been commissioned by Wates Developments to undertake an Ecological Appraisal in respect of proposed development of Land West of Turners Hill Road, Crawley Down.

ii) **Proposals.** The proposals relate to the northern part of the survey area, with an outline planning application submitted for the erection of 150 dwellings, a 65 bed care home, and associated infrastructure, open space and associated play facilities, utilities infrastructure and surface water drainage features.

iii) **Survey.** The survey area was initially surveyed in February 2022 with mapping of habitats based on the UK Habitat Classification system. Supplementary habitat survey information has been collected in September 2022, August 2024 and October 2024. In addition, a general appraisal of fauna was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of bats, Badger, Dormouse, breeding birds, Great Crested Newt and reptiles. Desk study information has also been gathered from the local records centre and online resources.

iv) **Ecological Designations.** The survey area is not subject to any statutory or non-statutory nature conservation designations. All such designations are well separated from the survey area and given the nature and scale of the proposals, are unlikely to be affected under the proposals. Ashdown Forest Special Area of Conservation (SAC) and Special Protection Area (SPA) is located approximately 6.8km to the south-east of the survey area. Further assessment of this designation is set out in the accompanying Report to Inform a Habitats Regulations Assessment.

v) **Habitats.** The survey area is dominated by modified grassland not forming an important ecological feature. Features of ecological importance within the application boundary include lowland mixed deciduous woodland, native hedgerows and lines of trees, whilst Ancient Woodland, veteran trees and ponds were recorded within and adjacent to the wider survey area. Aside from a small section of woodland and short lengths of hedgerow affected by access, these important features are fully retained under the proposals and will be protected during construction. Hedgerow and woodland losses will be compensated for by new planting.

vi) **Protected Species.** Habitats within the application boundary are suitable to support protected and notable fauna including roosting, foraging and commuting bats, Badger, Hedgehog and birds, whilst Great Crested Newt and Grass Snake have been recorded from the wider survey area. Appropriate mitigation measures are proposed to safeguard such species during construction and maintain the suitability of habitats in the long-term.

vii) **Enhancements.** Ecological enhancements proposed to secure a biodiversity net gain will be set out further in the BNG strategy as a separate submission. Faunal enhancements are also proposed, to be detailed as part of a faunal enhancement plan which can be secured via a suitably-worded planning condition.

viii) **Summary.** In summary, the proposals have sought to minimise impacts on biodiversity and subject to the implementation of appropriate avoidance, mitigation and compensation measures, the proposals would not result in significant harm to biodiversity.

1 Introduction

1.1 Background and Proposals

1.1.1 Aspect Ecology has been commissioned by Wates Developments to undertake an Ecological Appraisal in respect of proposed development of Land West of Turners Hill Road, Crawley Down.

1.1.2 Surveys have been undertaken within the area of land referred to as the 'survey area', centred at grid reference TQ336375 and identified at Plan 6482/ECO1.

1.1.3 This Ecological Appraisal accompanies a planning application for residential development within the northern part of the survey area, with the description of development as follows:

> *"Outline planning application (appearance, landscaping, layout and scale reserved) for the erection of up to 150 dwellings, a 65 bed care home, and community facility; and associated infrastructure including new access points off of Wychwood with associated spine road and car and cycle parking; the provision of open space and associated play facilities; utilities infrastructure, surface water drainage features, and associated features, on land west of Turners Hill Road and north of Huntsland, Crawley Down, West Sussex."*

1.1.4 The development proposals and application boundary are shown at Appendix 6482/1. The application boundary incorporates an additional area to the east outside of the main survey area, referred to as the northern access link area A. This follows an existing access through adjacent built development.

1.1.5 A separate planning application is to be submitted for the southern part of the survey area.

1.2 Overview of the Survey Area

1.2.1 The survey area is located to the west of Crawley Down in West Sussex and comprises a number of land parcels, bound by a wooded belt and disused railway to the south and by Turners Hill Road and associated residential development to the east, beyond which lies the main settlement of Crawley Down. Woodland bounds the survey area to the west and north-west, with a residential access road bounding the south-western portion of the survey area. Huntsland road cuts across the middle of the survey area.

1.2.2 The survey area itself comprises a number of grassland fields bounded by established hedgerows and treelines. The survey area also contains and is adjacent to a number of woodland blocks including a section of Ancient Woodland. A watercourse runs east to west through the southern part of the survey area, running along the survey area boundary within the central eastern field. A number of other habitats are present within the survey area including scrub, tall forbs, buildings, hardstanding and a small area containing invasive species.

1.3 Purpose of the Report

1.3.1 This report documents the methods and findings of the baseline ecology surveys and desktop study carried out in order to establish the existing ecological interest of the survey area, informing an appraisal of the likely ecological effects of the proposals. The importance of the habitats and species present is evaluated. Where necessary, avoidance, mitigation and compensation measures are proposed so as to safeguard any significant existing

ecological interest within the survey area. Where appropriate, opportunities for ecological enhancement are identified with reference to national conservation priorities and local Biodiversity Action Plans (BAPs). Habitats are also assessed under Statutory Biodiversity Metric Guidance to inform the pre-development biodiversity value of the survey area in regard to Biodiversity Net Gain (BNG).

2 Methodology

2.1 Desktop Study

2.1.1 In order to compile background information on the survey area and its immediate surroundings, Sussex Biodiversity Record Centre (SxBRC) was contacted in April 2022. Data was requested from within a search area extending 2km from the boundary of the survey area.

2.1.2 Information on statutory designations was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database[1], which uses data provided by Natural England, from within a search area extending to 25km from the survey area. The MAGIC database was also searched to identify the known presence of any Priority Habitats within or adjacent the survey area.

2.1.3 In addition, the Woodland Trust database[2] was searched for any records of ancient, veteran or notable trees within or adjacent to the survey area.

2.1.4 The information received from these organisations is discussed in the text and reproduced where appropriate at Appendix 6482/1 and on Plan 6482/ECO2.

2.2 Habitat Surveys

2.2.1 The survey area was initially surveyed in February 2022 in order to ascertain the general ecological value of the land contained within the boundaries of the survey area and to identify the main habitats and ecological features present.

2.2.2 The survey was informed by Phase 1 Habitat Survey methodology[3], with habitat types identified and mapped in accordance with the UK Habitat Classification system (version 2.0)[4], together with an assessment of the species composition of each habitat. This technique provides an inventory of the habitat types present and allows identification of areas of greater potential for botanical interest 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 Appraisal[5] to record details on the actual or potential presence of notable or protected species.

2.2.3 In line with guidance[6], the fine scale minimum mapping unit of 25sqm or 5m in length has been used where appropriate.

2.2.4 The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) taxon list[7].

[1] Multi-Agency Geographic Information for the Countryside (MAGIC), at https://magic.defra.gov.uk/
[2] Woodland Trust Ancient Tree Inventory, at https://ati.woodlandtrust.org.uk/
[3] Joint Nature Conservation Committee (2010, as amended) *Handbook for Phase 1 habitat survey: A technique for environmental audit.*
[4] UKHab Ltd (2023). *UK Habitat Classification Version 2.0* (at https://www.ukhab.org)
[5] Chartered Institute for Ecology and Environmental Management (CIEEM) (2013) *Guidelines for Preliminary Ecological Appraisal.*
[6] *The UK Habitat classification User Manual.* Version 1.1. 2020
[7] https://bsbi.org/taxon-lists

Habitat Condition Assessment

2.2.5 To determine the pre-development biodiversity value of the survey area for the BNG calculation, the condition of habitats has been assessed in accordance with the methodology set out in the Statutory Biodiversity Metric Technical Annex[8] and using professional judgement. Condition assessment data was collected during the February 2022 survey and subsequent visits in September 2022, August 2024 and October 2024.

2.2.6 Grassland habitats were subject to specific survey in September 2022, August 2024 and October 2024 based on the approach set out within the Farm Environment Plan (FEP) Manual[9], allowing an assessment of species per m^2 and frequency of indicator species. A transect was walked through each grassland area, with a number of stopping points (typically five or ten, chosen to be representative of the habitat type, albeit fewer quadrats were used within some smaller grassland parcels) to record species within a 1x1m quadrat. An assessment of frequency can then be made based on occurrence at each 1x1m quadrat, with frequent species occurring in five or more quadrats out of ten, occasional species occurring in three or four quadrats, and rare species occurring in one or two quadrats.

2.2.7 The grassland survey was undertaken by an experienced botanist, certified as Level 4 under the BSBI's Field Identification Skills Certificate (assessed July 2021).

River Condition Survey

2.2.8 A survey was undertaken of the central watercourse in October 2024 using the Modular River Physical (MoRPh) Survey method[10]. Specifically, a MultiMoRPh5 survey was undertaken comprising a desktop and field survey. The desktop survey assessed an extended reach of the watercourse to determine the indicative river type. This was combined with a field survey using three sets of five consecutive sample sections, each 10m in length within the western and eastern subreaches and 20m in length within the central subreach (200m in total). This provided an assessment of over 20% of the on-site reach (c.900m) of the watercourse.

2.2.9 Thirty-two Condition Indicator scores are estimated from the MoRPh field survey data. The Condition Indicators score a series of 'natural' (positive) and human-impacted (negative) properties of the bank tops, bank faces and river bed within each MoRPh5 subreach. The Condition Indicators are assigned scores ranging from 0 to +4 (positive indicators) or 0 to -4 (negative indicators) based on a numerical synthesis of subsets of survey observations. The average positive and average negative Condition Indicator scores for each MoRPh5 subreach are added together to generate a Preliminary Condition score. A Final Condition assessment is then assigned to each MoRPh5 subreach based on the Preliminary Condition score and the River Type being assessed. The River Shape is also calculated, to determine if the river is 'overdeep' and the condition score is adjusted accordingly.

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. Particular attention was also paid to the potential presence of protected, rare or notable species, with specific survey work undertaken for

[8] *Statutory Biodiversity Metric - Technical Annex 1 - Condition Assessment Sheets and Methodology*

[9] Natural England (2010) Higher Level Stewardship – Farm Environment Plan (FEP) Manual, 3rd Edition

[10] Gurnell et al. (2020) *The MoRPh Survey – Technical Reference Manual 2020 Version. Modular River Survey.*

bats, Badger *Meles meles*, Dormouse *Muscardinus avellanarius*, breeding birds, Great Crested Newt *Triturus cristatus* and reptiles as described below.

Bats[11]

Preliminary Appraisal

2.3.2 A review was undertaken of the desk study information obtained to identify any known constraints in relation to bats, the bat species recorded and habitats likely to be used by bats within the survey area and the surrounding area. This included a review of background records, known designations including SACs or SSSIs relevant to bats and an appraisal of OS mapping and aerial photography to identify habitats likely to be of value to bats.

2.3.3 During the initial habitat survey, the potential suitability of the survey area for bats in relation to roosting habitats, potential flight-paths and foraging habitats (termed a 'daytime bat walkover') was investigated. Features were assessed as of negligible, low, moderate or high potential suitability for roosting, foraging and commuting, based on the framework set out under BCT guidance. This appraisal has informed the scope of the survey work undertaken as set out below.

Buildings and Built Structures

2.3.4 **Visual Inspection Surveys.** Buildings and built structures within the survey area assessed as potentially suitable for use by roosting bats (namely the barns in the central area) were subject to internal and external inspection surveys using ladders, torches and binoculars where necessary in August 2024.

2.3.5 During the external inspections, particular attention was given to potential roost features or access points, such as broken or lifted roof tiles, lifted lead flashing, soffit boxes, weatherboarding, hanging tiles, and similar, and for any indications of use by bats such as accumulations of bat droppings or staining. Binoculars were used to inspect inaccessible areas more closely.

2.3.6 During the internal inspections, searches were made for evidence of the presence of bats with particular attention paid to any loft voids and locations such as ridge boards, rafters, purlins, gable walls, and mortise joints that may provide potential roost features. Specific searches were made for bat droppings that can indicate present or past use and the extent of use. Droppings collected during the course of the surveys were visually assessed and attributed to a species where possible on the basis of size/shape/texture[12]. Other signs searched for included the presence of stained areas, feeding remains and corpses.

2.3.7 Building inspection surveys were undertaken by a CL18 (bat survey level 2) licence holder (registration number: 2014-5763-CLS-CLS).

Trees

2.3.8 **Initial Assessment.** Trees were initially assessed for their suitability to support roosting bats during the habitat survey visits in February 2022 and August 2024 based on the presence of

[11] Surveys initially based on: Collins, J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* and informed by subsequent review of Reason, P.F. and Wray, S. (2023) *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats.* CIEEM; and Bat Conservation Trust (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn).*

[12] Stebbings, RE, Yalden DW and Herman, JS (2007). Which bat is it? A guide to bat identification in Great Britain and Ireland. The Mammal Society

features such as holes, cracks, splits or loose bark. Trees were categorised as supporting Potential Roost Features (PRFs), Further Assessment Required (FAR) or supporting no suitable features.

2.3.9 **Ground Level Tree Assessment.** Trees that may be impacted by the development proposals were subject to a Ground Level Tree Assessment (GLTA) based on relevant guidance[13] with PRFs categorised as PRF-I (only suitable for individual or small numbers of bats) or PRF-M (suitable for multiple bats). Any PRFs identified were inspected using binoculars from ground level for any signs indicating possible use by bats, such as staining, scratch marks or bat droppings. Where accessible from ground level, PRFs were subject to close inspection using a torch.

Activity Surveys

2.3.10 **Night-time Bat Walkover Surveys.** Walked transect surveys (now termed night-time bat walkovers (NBWs)) were undertaken in August to October 2022 and April to July 2023 to investigate foraging or commuting bat activity at the survey area. This survey method comprises walking transect routes around the survey area, specifically covering habitats and features which have been identified as potentially suitable for use by commuting or foraging bats. Anabat Scout handheld bat detectors were employed to aid identification of any bats observed. Dusk surveys began at sunset adjacent to the central watercourse corridor, likely to be of interest as a commuting route, with surveyors remaining in place for around 30 minutes before commencing the walked transect, continuing until at least 2 hours after sunset. A single dawn survey was undertaken in May 2023, commencing around 2 hours before sunrise. The transect route followed is shown at Plan 6482/ECO4.

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

Table 2.1. Dusk walked transect survey details.

Date	Start & end times & time of sunset	Equipment used	Weather
01/08/2022 (Dusk)	Start time: 20:47 End time: 22:50 Sunset: 20:47	Anabat Scout	Dry, 100% cloud, BF2, 19-18°C
26/09/2022 (Dusk)	Start time: 18:50 End time: 21:03 Sunset: 18:50	Anabat Scout	Dry, 95% cloud, BF2, 13-10°C
17/10/2022 (Dusk)	Start time: 18:05 End time: 20:21 Sunset: 18:04	Anabat Scout	Dry, 40% cloud, BF1, 15-14°C
18/04/2023 (Dusk)	Start time: 20:00 End time: 22:25 Sunset: 20:00	Anabat Scout	Dry, 5% cloud, BF1, 8-7°C
10/05/2023 (Dusk)	Start time: 20:40 End time: 23:10 Sunset: 20:36	Anabat Scout	Dry, 30% cloud, BF1, 13°C
11/05/2023 (Dawn)	Start time: 03:14 End time: 05:16 Sunrise: 05:17	Anabat Scout	Dry, 100% cloud, BF2, 8°C
12/06/2023 (Dusk)	Start time: 21:15 End time: 23:40 Sunset: 21:15	Anabat Scout	Dry, 5% cloud, BF1, 21-18°C
03/07/2023 (Dusk)	Start time:21:18 End time:00:10 Sunset: 21:18	Anabat Scout	Dry, 30% cloud, BF3, 17-13°C

[13] Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn).

Date	Start & end times & time of sunset	Equipment used	Weather
Comments: All surveys were undertaken by 2 surveyors under direction of licence holder 2014-5763-CLS-CLS			

BF0 = calm, BF12 = hurricane force

2.3.12 **Automated Surveys.** Automated static bat detector surveys were also carried out involving placement of Song Meter SM4BAT detectors at a number of locations within the survey area to record bat data over weekly periods during each month between August to October 2022 and April to July 2023.

2.3.13 Detector SD1 was deployed on the southern facing side of hedgerow H8 in the northern section of the survey area, detector SD2 was positioned in wooded strip W8 in the centre of the survey area, and detector SD3 was positioned within woodland W11, bordering watercourse WC1 (see Plan 6482/ECO4).

2.3.14 Static bat detectors were set to switch on approximately 30 minutes before sunset and switch off approximately 30 minutes after sunrise. The specific timings and weather conditions during the static detector surveys are set out at Appendix 6482/3.

Analysis of Bat Survey Recordings

2.3.15 All bat calls were analysed using Anabat Insight version 2.0 to identify 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* sp. bat calls around 40kHz or 50kHz) calls were identified to genus; in the case of calls which could not be distinguished between *Nyctalus* sp. and Serotine, these have been labelled as 'unidentified big bat' species.

Badger[14]

2.3.16 A full Badger survey was carried out in February 2022, with any additional observations of Badger made during subsequent visits to the survey area. The survey comprised two main elements. The first element involved searching for evidence of Badger setts. For any setts that were encountered, each sett entrance was noted and mapped. The following information was recorded:

- Number and location of well used and active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently;
- Number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance; and
- Number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.

2.3.17 The second element involved searching for signs of Badger activity such as well-worn paths and push-throughs, snagged hair, footprints, latrines and foraging signs, so as to build up a picture of any use of the survey area by Badger.

[14] Based on: Mammal Society (1989) Occasional Publication No. 9 – Surveying Badgers

Dormouse[15]

2.3.18 Surveys were undertaken in August to November 2022 and May to July 2023 to establish the presence/absence of Dormouse within the survey area. Survey work followed the methodology set out within best practice guidance[15], whereby nesting tubes are attached to branches of trees and shrubs and checked on a regular basis for signs of use by Dormouse.

2.3.19 The guidance employs an indexation system to calculate survey effort, which is based on the number of tubes deployed and the months during which these are in place and checked for signs of use. Months in which use of nest tubes by Dormouse is more likely are afforded a higher number of survey effort points than months when there is a lower likelihood of use. The guidance recommends that determination of absence of Dormouse from a site should be based on a survey effort score of at least 20 points.

2.3.20 Accordingly, a total of 156 Dormouse nest tubes were deployed within the survey area at the start of August 2022, positioned within hedgerows and woodland edges (see Plan 6482/ECO5). Nest tubes were checked in September 2022, November 2022, May 2023 and mid-July 2023, giving a total survey effort score of 23 points across the entire survey area (71.76 points based on the 156 tubes deployed).

Reptiles[16]

2.3.21 Given the presence of potentially suitable reptile habitat within the survey area, a survey was undertaken between April and May 2023 to establish the presence/absence of common reptile species.

2.3.22 A total of 130 50x50cm sheets of thick roofing felt were placed within suitable areas across the survey area to act as artificial refugia (see Plan 6482/ECO6). The refugia, which provide shelter for reptiles, 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 will readily use these refugia to bask upon or beneath so as to raise their body temperature, which allows them to forage earlier and later in the day. Checking the refugia at appropriate times of the day (morning and evening) for the presence of reptiles provides an effective measure of assessing the presence/absence of common reptiles at a site to be determined.

2.3.23 The refugia were left in place 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 nine occasions during suitable weather conditions as set out below in Table 2.2 (two additional visits were undertaken further to the standard seven visits due to rain on some survey visits).

[15] Based on: English Nature (2003) Surveying dormice using nest tubes: Results and experiences from the South West Dormouse Project, English Nature Research Report No. 524; English Nature (2006) The Dormouse Conservation Handbook, 2nd Edition; and Natural England (2011) Interim Natural England Advice Note – Dormouse surveys for mitigation licensing – best practice and common misconceptions, WML-537 (12/11)

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

Table 2.2. Reptile survey dates and weather conditions

Survey Date	Weather Conditions			
	Wind (BF)	Temp(°C)	Cloud Cover (%)	Precipitation
12/04/2023	3	9-10	5	None
18/05/2019	2	9-12	30	None
21/04/2023	2	8-10	100	Very light rain
24/04/2023	1	9-11	40	None
04/05/2023	2	14-16	60	None
10/05/2023	1	17	100	Rain for 10 minute period
17/05/2023	1	13-16	20	None
19/05/2023	2	13-16	100	Brief period of rain
22/05/2023	2	15-18	70	None

BF0 = calm, BF12 = hurricane force

2.3.24 Any reptiles that were observed basking in the open or within partial cover were also recorded. Searches were also made of existing natural objects (such as logs and rocks) and other artificial refugia (such as debris or discarded tyres), where present, for reptiles or evidence of reptiles (such as sloughed skin).

Great Crested Newt

2.3.25 As a first step in assessing the possible presence of Great Crested Newt at the survey area, Ordnance Survey mapping and satellite imagery were examined to identify water bodies within 500m of the survey area boundary.

2.3.26 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 boundary are only required *"when all of the following conditions are met: (a) maps, aerial photos, walk-over surveys or other data indicate that the pond(s) has potential to support a large great crested newt population, (b) the footprint contains particularly favourable habitat, especially if it constitutes the majority available locally, (c) the development would have a substantial negative effect on that habitat, and (d) there is an absence of dispersal barriers."*

2.3.27 Ponds within 250-500m of the survey area have been reviewed on this basis, and given these are separated by Turners Hill Road or large woodland areas providing more favourable habitat, with several forming larger ponds likely to support fish, it is considered that survey of ponds within 500m of the survey area boundary is not required, and that survey of ponds within 250m[17] represents adequate survey effort. Accordingly, ponds within 250m were subject to specific survey (where accessible) as detailed below.

Environmental DNA (eDNA)

2.3.28 Water samples were taken for eDNA analysis to investigate the presence/absence of Great Crested Newt at eight ponds within 250m of the survey area, identified as P1, P2, P3, P4, P5, P7a, P7b and P7c at Plan 6482/ECO7. A further pond P6 was recorded to be dry. Water samples were collected on 17 June 2024 following the procedure outlined in the methods

[17] 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

manual prepared for DEFRA by Biggs *et al*. (2014)[18]. The survey fell within the acceptable seasonal window set out by Natural England (15th April to 30th June)[19]. Samples were collected by suitably licensed Aspect Ecology staff. The water samples were sent for laboratory analysis which was conducted by Cellmark and also followed the procedure set out by Biggs *et al.* (2014)[14].

Breeding Birds[20]

2.3.29 The use of the survey area by breeding birds was assessed over three survey visits, each undertaken on a separate day in April, May and June 2023. Birds observed or heard within the survey area were recorded in accordance with a method modified from the British Trust for Ornithology's (BTO's) Common Bird Census technique[21].

2.3.30 On each survey occasion a route through the survey area was walked by an experienced ornithologist. Note was made of all birds either seen or heard. These 'registrations' were annotated on a plan using standard BTO codes for each bird species and appropriate abbreviations.

2.3.31 This survey methodology has the advantage over other survey methods of mapping each registration to a specific point within the survey area and is therefore able to identify those areas containing the highest density and diversity of bird species.

2.3.32 The dates of each survey, together with a summary of the weather conditions are shown in Table 2.3 below.

Table 2.3. Breeding bird survey dates and weather conditions.

Survey Date	Weather Conditions			
	Wind (BF)	Temp(°C)	Cloud Cover (%)	Precipitation (0-5)
14/04/2023	2	8	50-100	0
12/05/2023	1	15	0-25	0
15/06/2023	1-3	15	10-50	0

2.4 Survey Constraints and Limitations

2.4.1 Not all of the species that occur in each habitat will necessarily be present or detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons.

2.4.2 The initial habitat survey was undertaken outside the optimal season. However, the broad habitat types present within the survey area were able to be identified sufficiently for the purpose of this report, and to enable an adequate assessment of the intrinsic ecological

[18] 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. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA*'. Freshwater Habitats Trust, Oxford.

[19] Natural England (2015) '*Great crested newts: surveys and mitigation for development projects. Standing advice for local planning authorities who need to assess the impacts of development on great crested newts*'. Last updated at www.gov.uk on 24/12/2015.

[20] 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.

[21] Marchant (1983) Common Birds Census Instructions. Available at: https://www.bto.org/our-science/publications/birdtrends/2020/methods/common-birds-census

interest of the survey area to be made. Additional information on the habitats present within the survey area was collected during September 2022 and August 2024 allowing a robust assessment of habitats and botanical interest within the survey area to be made.

2.4.3 Note was made of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) that were observed during surveys. However, because the detectability of such species varies according to factors such as the time of year or site management regime, the absence of invasive species should not be assumed even if no such species were recorded during the surveys undertaken.

2.4.4 A recognised limitation of bat activity surveys is that bat detectors can only provide an index of activity rather than determine absolute numbers of bats. The results of bat activity surveys should therefore only be considered indicative of the amount of use bats make of an area rather than a measure of the abundance of bats. In addition, some bat species that are more difficult to detect because of their quiet echolocation calls, such as Brown Long-eared Bat, may be under-recorded.

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)[22], which identifies 'important ecological features' within a defined geographical context (i.e. international, national, regional, county, district, local or site importance). Further details are provided at Appendix 6482/4.

2.6 Relevant Planning Policy

National Policy Approach to Biodiversity in the Planning System

2.6.1 The National Planning Policy Framework (NPPF)[24] 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 06/2005[25].

2.6.2 NPPF takes forward the Government's strategic objective to halt overall biodiversity loss[26], as set out at Paragraph 187, 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 and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs*'

2.6.3 The approach to dealing with biodiversity in the context of planning applications is set out at Paragraph 193:

[22] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, ver. 1.2, Chartered Institute of Ecology and Environmental Management, Winchester

[24] Ministry of Housing, Communities and Local Government (December 2024) *National Planning Policy Framework*

[25] ODPM (2006) Circular 06/2005: Planning for Biodiversity and Geological Conservation – A Guide to Good Practice

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

'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 improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.'

2.6.4 The above approach encapsulates the 'mitigation hierarchy' described in British Standard BS 42020:2019[27], which sets out 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
- **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 type and scale of the proposed development (BS 42020:2019, section 5.5).

Local Policy

2.6.6 Mid Sussex District Council adopted its District Plan (2014-2031) in March 2018. This outlines the Council's current vision and strategy for the District. A Regulation 19 version of a new District Plan (2021-2039) has been submitted and is currently at examination.

Adopted District Plan (2014-2031)

[27] British Standards Institution (2013) Biodiversity – Code of practice for planning and development, BS 42020:2019

2.6.7 The current District Plan (adopted March 2018) contains the following policies which are relevant to biodiversity and ecology:

- DP17: Ashdown Forest SPA and SAC (sets out mitigation requirements in relation to Ashdown Forest including provision of SANG and SAMM within a 7km zone of influence)
- DP37: Trees, Woodland and Hedgerows (sets out the protection and enhancement of trees, woodland and hedgerows)
- DP38: Biodiversity (sets out how biodiversity will be protected and enhanced)

Draft District Plan (2021-2039)

2.6.8 The submission draft (Regulation 19) version of the new District Plan (dated December 2023) includes a number of policies relevant to ecology and biodiversity:

- DPN1: Biodiversity, Geodiversity and Nature Recovery (sets out the protection and enhancement of biodiversity, soil, geodiversity, water and nature recovery)
- DPN2: Biodiversity Net Gain (requires that good practice principles for biodiversity net gain are followed, sets out a minimum percentage of 10% biodiversity net gain and preference for on-site provision)
- DPN3: Green and Blue Infrastructure (sets out the protection and enhancement of green and blue infrastructure and how this should be incorporated within development)
- DPN4: Trees, Woodland and Hedgerows (sets out the protection and enhancement of trees, woodland and hedgerows)
- DPC6: Ashdown Forest SPA and SAC (sets out mitigation requirements in relation to Ashdown Forest including provision of SANG and SAMM within a 7km zone of influence)

2.6.9 The survey area itself is proposed for allocation for residential development within the emerging District Plan under Policy DPA9 (Land to west of Turners Hill Road, Crawley Down).

Crawley Down Neighbourhood Plan 2014-2031

2.6.10 The Crawley Down Neighbourhood Plan (dated January 2016) includes two policies relevant to ecology and biodiversity:

- CDNP09: Protect and Enhance Biodiversity
- CDNP11: Ashdown Forest SAC and SPA (in line with Policies DP17 and DPC6 above)

3 Ecological Designations

3.1 Statutory Designations

3.1.1 The statutory designations of ecological importance that occur within the local area around the survey area are shown on Plan 6482/ECO2.

3.1.2 The nearest statutory nature conservation designation to the survey area is Turner's Hill Site of Special Scientific Interest (SSSI), located approximately 1.7km to the south, designated for its geological importance

3.1.3 The next nearest statutory nature conservation designation to the survey area is Hedgecourt SSSI, which is located approximately 2.5km to the north-east. This SSSI is designated as an important wetland site.

3.1.4 The nearest European designation is Ashdown Forest Special Area of Conservation (SAC) and Special Protection Area (SPA) located approximately 6.8km to the south-east of the survey area. Ashdown Forest is designated for its wet and dry heaths that support wide assemblages of rare and notable species including nationally important numbers of breeding Nightjar and Dartford Warbler.

3.1.5 Natural England has developed Impact Risk Zones (IRZs) as an initial tool to help assess the risk of developments adversely affecting SSSIs, taking into account the type and scale of developments. The survey area sits within a number of IRZs, however these do not relate to residential development.

Assessment of Proposals

3.1.6 The survey area (and application boundary) itself is not subject to any statutory nature conservation designations. All statutory ecological designations in the surrounding area are well separated from the survey area and given the nature and scale of the proposals (including substantial open space provision which will accommodate the majority of recreational activity), these designations are unlikely to be affected.

3.1.7 Further discussion of potential effects and mitigation requirements in relation to Ashdown Forest SAC/SPA is given the accompanying Report to Inform a Habitats Regulations Assessment.

3.2 Non-statutory Designations

3.2.1 The non-statutory designations of nature conservation interest that occur within the local area are shown on Plan 6482/ECO2.

3.2.2 The nearest non-statutory designation to the survey area is Worth Way Country Park cycle route, which is directly adjacent to the southern boundary of the survey area, formed by a disused railway line. The section adjacent to the survey area is not designated for its nature conservation interest, although parts of the Worth Way are designated as Local Wildlife Site (LWS) approximately 1.2km to the east, supporting woodland, scrub and open grassland habitats of importance as semi-natural habitat and a wildlife corridor within an urban environment.

3.2.3 The nearest non-statutory nature conservation designation to the survey area is Lobbs Wood and Furnace Pond LWS, which is located approximately 0.7km north-east of the

survey area. This forms part of an ancient woodland complex with a gill valley and large area of open water.

Assessment of Proposals

3.2.4 The survey area (and application boundary) itself is not subject to any non-statutory nature conservation designations. Worth Way Country Park is located adjacent to the southern boundary of the survey area, although this is over 400m from the application boundary whilst the adjacent section is not designated for its nature conservation interest (the nearest section subject to LWS designation is located 1.2km to the east). Given the nature and scale of the proposals (including substantial open space provision which will accommodate the majority of recreational activity), no significant adverse effects are anticipated in relation to Worth Way.

3.2.5 All other non-statutory designations in the surrounding area are well separated from the survey area and given the nature and scale of the proposals, these designations are unlikely to be affected.

3.3 Priority Habitats, Ancient Woodland and Notable Trees

3.3.1 A number of areas of woodland within and adjacent to the survey area are identified in MAGIC as the Priority Habitat 'Deciduous Woodland'. These include two areas of woodland within the survey area identified as Ancient Semi-Natural Woodland (ASNW), whilst further areas of ASNW are located adjacent to the survey area (see Plan 6482/ECO2). Other Priority Habitats identified on MAGIC within the immediate surrounds of the survey area include several small Traditional Orchards.

3.3.2 There are no records of any notable or veteran trees within the survey area. The nearest record is of a veteran Downy Birch within a residential garden to the west of the survey area.

Assessment of Proposals

3.3.3 Based on the desktop study, Priority Habitats and Ancient Woodland are present within the survey area. These are discussed further in the subsequent habitats chapter.

3.4 Summary

3.4.1 The survey area itself is not subject to any statutory or non-statutory ecological designations and, subject to the implementation of appropriate mitigation measures in regard to Ashdown Forest SAC/SPA (set out in the accompanying Report to Inform a Habitats Regulations Assessment), it is unlikely that any such designations in the surrounding area will be significantly affected by the proposals.

4 Habitats and Ecological Features

4.1 Background Records

4.1.1 A number of records of protected, rare or notable plant species were returned from SxBRC for within or adjacent to the survey area including the Red List Bird's-nest Orchid *Neottia nidus-avis* and Nationally Scarce Coralroot Bittercress *Cardamine bulbifera*, dating between 1995 and 2017. No evidence for the presence of any of these species within the survey area was recorded during the survey work undertaken, the records likely relating to adjacent Ancient Woodland areas.

4.2 Overview

4.2.1 The locations of habitat types and features within the survey area are indicated on Plan 6842/ECO3.

4.2.2 The survey area itself comprises a number of grassland fields bounded by established hedgerows and treelines. The survey area also contains and is adjacent to a number of woodland blocks including a section of Ancient Woodland. A watercourse runs east to west through the southern part of the survey area, running along the survey area boundary within the central eastern field. A number of other habitats are present within the survey area including scrub, tall forbs, buildings, hardstanding and a small area containing invasive species.

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, Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats which are of principal importance for conservation in England. This list is largely derived from the 'Priority Habitats' listed under the former UK BAP, which continue to be regarded as priority habitats under the subsequent country-level biodiversity strategies.

4.3.2 Of the habitats within the survey area, lowland mixed deciduous woodland, hedgerows (including lines of trees) and ponds are listed as Priority Habitats and therefore may constitute important ecological features. This is discussed further in the relevant habitat sections below.

4.4 Irreplaceable Habitats

4.4.1 Irreplaceable habitats are now defined under The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024 and include blanket bog, lowland fens, limestone pavements, coastal sand dunes, ancient woodland, ancient trees and veteran trees, spartina saltmarsh swards and mediterranean saltmarsh scrub.

4.4.2 The survey area includes ancient woodland and ancient/veteran trees which are defined as irreplaceable habitats. These are discussed further in the relevant habitat sections below.

4.5 Habitat Descriptions and Evaluation

4.5.1 The habitats and ecological features present within the survey area are described in Table 4.1 below. This table sets out their UK Habitat Classification Primary Habitats and Secondary

Codes, and the corresponding habitat type and condition according to the Statutory Biodiversity Metric. The table also indicates whether these habitats constitute an important ecological feature and sets out their level of importance, taking into account the status of habitat types and the presence of rare plant communities or individual plant species of elevated interest. Further information relevant to grassland and woodland habitats is set out below the table. The value of habitats for the fauna they may support is considered separately in Chapter 5 below.

4.5.2 More detailed survey results of grassland habitats and hedgerows are provided at Appendix 6482/6, and details of habitat condition assessments are provided at Appendix 6482/7.

Table 4.1a. Habitat Descriptions and Evaluation – Area Habitats

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
G1	g4 modified grassland 14	Grassland: modified grassland (moderate condition)	Grassland G1 forms the northernmost field within the survey area (F1), bounded by offsite woodland and a hedgerow to the south. Relative to the other grassland areas, the sward within this field was more tussocky and rush dominated, appearing to be grazed less in comparison to G2. The grassland supported an average of 6.2 species per m^2, with frequent or occasional grass species including Common Bent *Agrostis capillaris* and Yorkshire-fog *Holcus lanatus*, and typical herb species present including Common Bird's-foot-trefoil *Lotus corniculatus*, Creeping Buttercup *Ranunculus repens*, Creeping Thistle *Cirsium arvense* and Greater Bird's-foot-trefoil *Lotus pedunculatus*. Lesser Spearwort *Ranunculus flammula* was also noted. As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature
G2	g4 modified grassland	Grassland: modified grassland (poor condition)	Grassland G2 forms a large field in the northern part of the survey area (F2). The grassland appears to be subject to periodic grazing and mowing, maintaining a uniform sward height typically 20-30cm in length. The field is heavily grass dominated with few herbs, supporting an average of 5.5 species per m^2. Grass species present that were occasional or frequent include Common Bent, Perennial Rye-grass *Lolium perenne* and Yorkshire-fog. Occasional or frequently occurring herb species include Common Mouse-ear *Cerastium fontanum*, Common Sorrel *Rumex acetosa subsp. acetosa,* Creeping Buttercup, Greater Bird's-foot-trefoil and White Clover *Trifolium repens*. As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
G3	g4 modified grassland	Grassland: modified grassland (moderate condition)	Grassland G3 is centrally located in the survey area (F3), bounded by woodland to the north and south and existing farm buildings to the east. The grassland appears to be subject to periodic grazing and mowing, maintaining a uniform sward height typically 5-10cm in length. This grassland supports an average of 6.4 species per m^2 with frequent and occasional grass species including Common Bent, Yorkshire-fog, Perennial Rye-grass, Red Fescue *Festuca rubra,* Timothy *Phleum pratense* and Sweet-vernal Grass *Anthoxanthum odoratum*. Herb content is low with typical species including Broad-leaved Dock *Rumex obtusifolius,* Common Sorrel and Creeping Buttercup. As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature
G4	g4 modified grassland	Grassland: modified grassland (moderate condition)	Grassland G4 is located in the southern parcel of the survey area (F4), to the north of G7 and west of G6. The field appears to be managed similarly to G3, subject to periodic grazing and mowing, maintaining a uniform sward height typically 5-10cm in length. The grassland was recorded to support an average of 7 species per m2, with a low content of herbs. Typical grass species include Common Bent, Perennial Rye-grass, Red Fescue, Sweet Vernal Grass and Yorkshire Fog, with herbs including Creeping Buttercup, Greater Bird's-foot Trefoil and White Clover. As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature
G5	g4 modified grassland 14	Grassland: modified grassland (moderate condition)	Grassland G5 is located in the central eastern part of the survey area (F5), bordered by woodland and watercourse WC1 to the east and south. The field appears to be subject to periodic grazing and mowing and supports a uniform sward height which becomes tussocky at the field margins. The grassland supports an average of 7.8 species per m^2 with frequent and occasional grasses including Common Bent, Yorkshire-fog, Perennial Rye-grass and Red Fescue. Herb content is generally low, with frequently and occasionally occurring herbs including Creeping Buttercup, Common Bird's-foot Trefoil, White Clover, Common Sorrel and Common Mouse-ear. Patches of Soft Rush *Juncus effusus* and Lesser Spearwort are also present, indicating damp or poorly drained conditions. As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
G6	g4 modified grassland	Grassland: modified grassland (moderate condition)	Grassland G6 is located in the south-eastern part of the survey area (F6), bordered by hedgerows, treelines and woodland. The field appears to be subject to periodic grazing and mowing and supports a uniform sward height with few tussocks. The grassland supports an average of 6.8 species per m^2 with frequent and occasional grass species including Common Bent, Yorkshire-fog, Perennial Rye-grass, Red Fescue and Cock's-foot *Dactylis glomerata.* A moderate herb cover is present, although this is dominated by White Clover and Creeping Buttercup. Other typical herb species include Common Sorrel and Crane's-bill *Geranium sp..* As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature
G7A	g4 modified grassland	Grassland: modified grassland (moderate condition)	Grassland G7A forms the southernmost field (F7), situated on a gentle southern slope leading to rush dominated areas in the west and south (G7B). The grassland is similar in character and composition to G4 and G6 with an average species count of 6.4 species per m^2. As set out in the grassland habitat sheet at Appendix 6482/6, the grassland does not meet sufficient criteria for other neutral grassland, and as such is classified as modified grassland.	Does not form important ecological feature
G7B	g3c other neutral grassland 15, 502	Grassland: other neutral grassland (poor condition)	Grassland G7B is located in the south-western part of F7, bordered by woodland to the west and south. It is located at lower elevation and accordingly supports wetter ground, with vegetation dominated by rushes. The grassland was recorded to support an average of 5.7 species per m^2, with typical species including Soft Rush, Common Bent, Greater Bird's-foot Trefoil, Jointed Rush *Juncus articulatus*, Perennial Rye-grass and Yorkshire Fog.	Does not form important ecological feature
G8	g3c other neutral grassland 524	Grassland: other neutral grassland (poor condition)	G8 comprises a narrow strip of grassland within the area of farm buildings in the central part of the survey area. It comprises rough tussocky grassland cut to 10-15cm height, with species including Common Bent, Soft Rush, Common Nettle *Urtica dioica*, Creeping Buttercup, Docks *Rumex sp.* and Common Ragwort *Jacobaea vulgaris*. A small stand of Japanese Knotweed *Reynoutria japonica* was recorded in this location.	Does not form important ecological feature

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
W1	(ASNW) w1f lowland mixed deciduous woodland 28, 30, 524	Woodland and forest: lowland mixed deciduous woodland (good condition)	Woodland W1 is an ASNW located in the east of the survey area at the eastern boundary of G5. Most of the woodland is located offsite, with only a small area contained within the survey area west of watercourse WC1. W1 is characterised by a high canopy, primarily composed of English Oak *Quercus robur* and Birch *Betula sp.*, with Holly *Ilex aquifolium* and the invasive Cherry Laurel *Prunus laurocerasus* present in the understorey. The topography of this woodland is uneven with various mounds and banks throughout. Ground flora consists of a dense cover of Bluebells *Hyancinthoides non-scripta* and Daffodils *Narcissus sp.*, with deadwood present.	**Irreplaceable habitat, priority habitat, forms important ecological feature (local value)**
W2	(ASNW) w1f lowland mixed deciduous woodland 28, 30, 524	Woodland and forest: lowland mixed deciduous woodland (moderate condition)	Woodland W2 is ASNW forming a wooded strip located between fields G5 and G6. Watercourse WC1 runs through the middle of W2, creating a gently sloped valley with a mixed canopy consisting of Ash *Fraxinus excelsior* and several large Oak trees. The understory is predominantly coppiced Hazel *Corylus avellana* and Holly with some Cherry Laurel. Ground flora is similar to woodland W1, with Snowdrop *Galanthus nivalis*, Daffodil sp., Bluebell, Lesser Celandine *Ficaria verna* and Golden-leaved Saxifrage *Chrysosplenium oppositifolium* present. An existing farm track runs north to south through the eastern part of the woodland, situated on an earth bund over the watercourse.	**Irreplaceable habitat, priority habitat, forms important ecological feature (local value)**
W3	w1f lowland mixed deciduous woodland 30	Woodland and forest: lowland mixed deciduous woodland (good condition)	Woodland W3 is largely offsite adjacent to G6 and G7 at the southern boundary (along the Worth Way disused railway line), although some vegetation does encroach into the survey area by approximately 5m including young Hazel coppice, Holly, Willow *Salix sp.* and Ash together with loose Bramble *Rubus fruticosus agg.* scrub and Common Nettle.	**Priority habitat, forms important ecological feature (local value)**
W4	w1f lowland mixed deciduous woodland 31	Woodland and forest: lowland mixed deciduous woodland (poor condition)	Woodland W4 located adjacent to G7 at the southern boundary is wet in nature, with a ditch at its northern boundary. The woodland is young in age dominated by Grey Willow *Salix cinerea* and Birch, forming a low canopy approximately 8-10m height. The ground flora is mostly bare or with Common Nettle and grasses.	**Priority habitat, forms important ecological feature (local value)**
W5	w1f lowland mixed deciduous woodland 30	Woodland and forest: lowland mixed deciduous woodland (moderate condition)	Woodland W5 is a narrow strip of woodland located in the south west of the survey area, adjacent to watercourse WC2. The woodland is dominated by relatively young Alder, Willow *Salix* and Birch trees with occasional Oak, forming a canopy to around 12m height. Bramble and Bracken *Pterdium aquilinum* present are present in the ground flora, together with Lords and Ladies *Arum maculatum*, Ivy *Hedera helix* and Hart's tongue fern *Asplenium scolopendrium*.	**Priority habitat, forms important ecological feature (local value)**

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
W6	(ASNW) w1f lowland mixed deciduous woodland 28, 30, 524	Woodland and forest: lowland mixed deciduous woodland (moderate condition)	Woodland W6 is ASNW located in the south west corner of the survey area, the majority extending offsite. An access road separates W6 from the adjacent watercourse WC2 and woodland W5. This woodland is characterised by a mixed canopy comprising mature Oak and Beech with an understory of Hazel coppice and Holly. The ground was relatively bare in comparison to the other ASNWs, with noted presence of Rhododendron *Rhododendron sp.*	**Irreplaceable habitat, priority habitat, forms important ecological feature (local value)**
W7	(ASNW) w1f lowland mixed deciduous woodland 28, 30	Woodland and forest: lowland mixed deciduous woodland (good condition)	Woodland W7 is ASNW located in the southern part of the survey area. Watercourse WC1 runs through the woodland with areas of wet and marshy ground either side, whilst Alder is frequent in the canopy, together with Oak and occasional Birch and Ash. A loose understorey of Hazel and Holly is present. The ground flora is relatively diverse, with species including Common Nettle, Opposite-leaved Golden Saxifrage, Lesser Celandine, Wood Avens *Geum urbanum*, Cleavers *Galium aparine*, Male Fern *Dryopteris filix-mas*, Hart's Tongue Fern, Bluebell, Herb Robert *Geranium robertianum*, Lords and Ladies and Pendulous Sedge *Carex pendula*. In areas of higher ground further from the watercourse the ground is drier and ground flora composition changes, being dominated by Bluebells and Red Campion. The southern woodland boundary is relatively open, although dense Bramble and lower shrubs form dense screening along the northern edge.	**Irreplaceable habitat, priority habitat, forms important ecological feature (local value)**
W8	w1f lowland mixed deciduous woodland 30, 524	Woodland and forest: lowland mixed deciduous woodland (moderate condition)	Woodland W8 is a thin strip of woodland that divides fields G2 and G3, running either side of Huntsland road. The track measures approximately 2.5m in width, with the total width of the wooded strip being approximately 25m. Trees present include Oak and Ash with a loose understorey of Hazel and Holly. Ground flora includes Lesser Stitchwort *Stellaria graminea*, Cow Parsley *Anthriscus sylvestris*, Lord's and Ladies, Daffodils, Bluebell, Ivy, Bramble and Lesser Celandine, together with patches of the non-native Early-flowering Borage *Trachystemon orientalis.*	**Priority habitat, forms important ecological feature (local value)**
W11	w1f lowland mixed deciduous woodland 31, 524	Woodland and forest: lowland mixed deciduous woodland (poor condition)	Woodland W11 comprises a small wooded strip located centrally within the survey area adjacent watercourse WC1 between grassland fields F3 and F4. This woodland is dominated by young Alder and Willow with some larger coppiced trees along the ditch. Ground flora includes Opposite-leaved Golden Saxifrage, Pendulous Sedge, Wood Avens and Japanese Butterbur *Petasites japonicus*.	**Priority habitat, forms important ecological feature (local value)**

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
W12	w1f lowland mixed deciduous woodland 30, 524	Woodland and forest: lowland mixed deciduous woodland (moderate condition)	Woodland W12 forms a wooded strip either side of Huntsland road along the western boundary of grassland field G5. The woodland is formed by dense shrubby vegetation approximately 10-12m high, with species including mature Oaks, Birch, Holly, Hornbeam *Carpinus betulus*, Willow, Rhododendron and Cherry Laurel.	**Priority habitat, forms important ecological feature (local value)**
W13	w1f lowland mixed deciduous woodland 30	Woodland and forest: lowland mixed deciduous woodland (moderate condition)	Woodland W13 is located between Turners Hill Road and grassland field G5 at the eastern edge of the survey area. It is continuous to woodland W1, although is not identified as Ancient Woodland, and particularly in terms of the ground flora is of differing character, being mostly bare with occasional species including Lords and Ladies and Snowdrop. Occasional mature Oaks are present although the woodland is mostly formed by low Hazel coppice and Holly and younger trees including Wild Cherry *Prunus avium* and Silver Birch.	**Priority habitat, forms important ecological feature (local value)**
W14	w1f lowland mixed deciduous woodland 31	Woodland and forest: lowland mixed deciduous woodland (poor condition)	Woodland W14 forms a narrow wooded strip either side of watercourse WC1 between grassland fields F3 and F4. It measures approximately 8m in width, and largely comprises shrubby Blackthorn *Prunus spinosa*, Willow and Hazel to a height of approximately 6-8m, with occasional larger trees including Oak and Ash. The ground flora is mostly dominated by Common Nettle.	**Priority habitat, forms important ecological feature (local value)**
TF1-TF5	(tall forbs) 16, 524	Sparsely vegetated land: tall forbs (poor to moderate condition)	Areas of tall forb vegetation were recorded within the survey area at field and woodland margins, together with more extensive areas in the surrounds of the farm buildings in the centre of the survey area. More established areas of tall forb vegetation are shown on Plan 6482/ECO3 and include TF1, a stand dominated by Japanese Knotweed with some Common Nettle, Hemlock *Conium maculatum*, Burdock *Arctium sp.*, Comfrey *Symphytum officinale*, Bramble and Buddleia *Buddleja sp.*; TF2, mostly Common Nettle dominated with some Bramble, Hemlock, Teasel *Dipsacus fullonum* and Elder *Sambucus nigra*; TF3, a small stand dominated by Common Nettle; and TF4, an area with Common Nettle, Hemlock and Bramble.	Does not form important ecological feature
-	h3d Bramble scrub	Heathland and shrub: Bramble scrub (condition assessment N/A)	Narrow bands of scrub are present around the margins of the grassland fields in places, dominated by Bramble *Rubus fruticosus agg.*	Does not form important ecological feature

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
MS1-MS7	h3h mixed scrub	Heathland and shrub: mixed scrub (poor condition)	A number of small areas of mixed scrub are present within the survey area. MS2, MS6 and MS7 are mostly Willow dominated. MS1, MS3 and MS5 largely comprise Bramble with some tree saplings, with Buddleia, Willow and Cherry also noted within MS3, and Elder and Rose *Rosa sp.* within MS5. MS4 comprises a small stand of scrub dominated by Privet with some Elder and Bramble.	Does not form important ecological feature
-	g1c Bracken	Grassland: Bracken (condition assessment N/A)	Several areas of Bracken dominated vegetation are present at the western edge of grassland G2, adjacent to the woodland edge.	Does not form important ecological feature
-	(hardstanding) u1b developed land – sealed surface	Urban: developed land; sealed surface (N/A – other)	The survey area contains a number of access tracks leading to the buildings present and parking areas, surfaced with tarmac, concrete or compacted gravel. The northern access link area A also comprises hardstanding, formed by an existing road within adjacent built development.	Does not form important ecological feature
B1-B7	(buildings) u1b developed land – sealed surface	Urban: developed land; sealed surface (N/A – other)	A number of farm buildings are present within the central part of the survey area (B1-B7), largely comprising modern agricultural barns.	Does not form important ecological feature
-	u1c artificial unvegetated, unsealed surface	Urban – artificial unvegetated, unsealed surface (N/A – other)	An existing farm track leads through woodland W2 across a bund over the watercourse. This area is included within the Ancient Woodland boundary, but is not representative of the habitat type.	Does not form important ecological feature
T12, T14, T30, T31	(veteran trees) 204	Rural tree (T12, T14: good condition**)	Two veteran English Oak trees are located within the open grassland fields G4 and G7 (T12 and T14, referenced in the Tree Report as 5369 and 1068 respectively). Two further veteran trees (T30 and T31, referenced in the Tree Report as 5164 and 5160 respectively) are located at the edge of woodlands W1 and W2 in the eastern part of the survey area.	**Irreplaceable habitat, forms important ecological feature (local value)**
-	(trees) 200, 203	Rural tree (moderate – good condition**)	Several standard trees are located throughout the survey area, within the hedgerows and located in the open fields. These include a number of mature Oaks within fields G4 and G7 which are notable specimens.	Does not form important ecological feature

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
Offsite habitats				
W9	(ASNW) w1f lowland mixed deciduous woodland 28, 30, 524	Woodland and forest: lowland mixed deciduous woodland (condition not assessed – offsite)	Woodland W9 is a large area of ASNW that bounds the north west of the survey area (lying fully offsite) adjacent to grasslands G1 and G2. The edge of the woodland runs up to the boundary fence line with an overhanging canopy. It is dominated by Hazel coppice with Oaks present. Similar to the other ASNWs, Bluebells dominate the ground flora. Along the northern edge of the survey area, the woodland becomes more acidic in character, with more frequent Birch, Bracken and Rhododendron.	**Irreplaceable habitat, priority habitat, forms important ecological feature (local value)**
W10	(ASNW) w1f lowland mixed deciduous woodland 28, 30	Woodland and forest: lowland mixed deciduous woodland (condition not assessed – offsite)	Woodland W10 is another area of ASNW bounding the north-eastern part of the survey area (lying fully offsite) adjacent to fields G1 and G2. Relatively young trees form a canopy approximately 10-12m in height with species including Birch, Ash, Oak, Holly and Hazel. The ground layer in woodland W10 is dominated by Bramble.	**Irreplaceable habitat, priority habitat, forms important ecological feature (local value)**
P1	(pond) r1g other standing water 41	Lakes: ponds (non-priority habitat) (condition not assessed – offsite)	Pond P1 is located adjacent to the survey area, associated with an offsite residential property and is an ornamental pond of medium size. The banks of the pond are steeply sloping with little vegetation surrounding the margins. No evidence of priority species has been recorded, such that the pond is not considered to form a priority habitat type.	Does not form important ecological feature
P2	(pond) r1g other standing water 40	Lakes: ponds (priority habitat) (condition not assessed – offsite)	Pond P2 is a small pond to the west of the survey area, measuring approximately 5x10m and heavily encroached with emergent vegetation. The pond has been recorded to support the priority species Great Crested Newt and therefore forms a priority habitat.	**Priority habitat, forms important ecological feature (local value)**

** Habitat types not listed as a primary habitat are indicated in brackets*

*** Trees forming part of woodlands or hedgerows are not individually assessed in terms of habitat condition*

UK Hab Secondary Codes:

14 – scattered rushes
15 – rushes dominant
16 – tall forbs
28 – ancient woodland site
30 – semi-natural woodland
31 – secondary woodland
40 – ponds (priority habitat)
41 – pond (non-priority)
200 – tree
203 – mature tree
204 – veteran tree
502 – seasonally wet
524 – invasive non-native species

Table 4.1b. Habitat Descriptions and Evaluation – Hedgerows/Line of Trees

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
H2	h2b non-native and ornamental hedgerow	Non-native and ornamental hedgerow (poor condition)	Non-native hedgerow forming residential boundary with Beech and Cypress	Does not form important ecological feature
H1	h2a native hedgerow	Native hedgerow (good condition)	The survey area contains a number of hedgerows, forming internal field boundaries or associated with the survey area boundary. The hedgerows throughout the survey area vary in height, width, age, species present and management. Species are mostly species-poor with less than 5 species per 30m stretch, although hedgerows H3-H5 in the south are recently planted with a more diverse mixture of species, and accordingly form species-rich examples. The ground flora associated with the hedgerow network within the survey area is generally species-poor and dominated by common species such as Bramble, Common Nettle and Cleavers together with occasional Lords-and-Ladies, Foxglove *Digitalis purpurea* and Red Dead-nettle *Lamium purpereum*. Native hedgerows form a priority habitat type.	**Priority habitat, forms important ecological feature (local value)**
H3	h2a5 species-rich native hedgerow	Species-rich native hedgerow (good condition)		
H4	h2a5 species-rich native hedgerow	Species-rich native hedgerow (good condition)		
H5	h2a5 species-rich native hedgerow	Species-rich native hedgerow (good condition)		
H6	h2a native hedgerow	Native hedgerow (good condition)		
H7	h2a native hedgerow 111	Native hedgerow – associated with bank or ditch (good condition)		
H8a	h2a native hedgerow 33, 50	Native hedgerow with trees – associated with bank or ditch (moderate condition)		
H8b	h2a native hedgerow 50	Native hedgerow – associated with bank or ditch (good condition)		
H9	h2a native hedgerow	Native hedgerow (good condition)		

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
H10	h2a native hedgerow	Native hedgerow (good condition)		
H11	h2a native hedgerow	Native hedgerow (good condition)		
TL1	(line of trees) 33	Line of trees (moderate condition)	A small number of treelines are present at the boundaries of the survey area. TL1 and TL2 comprise predominately native trees (mostly Oak) with semi-mature and mature specimens. TL3 forms a line of Willows adjacent to the farm building area. TL4 and TL5 form the boundaries of residential properties and are largely non-native as a result.	**Priority habitat, forms important ecological feature (local value)**
TL2	(line of trees) 33	Line of trees (good condition)		
TL3	(line of trees) 33	Line of trees (moderate condition)		
TL4	(line of trees) 33	Line of trees (moderate condition)		Does not form important ecological feature
TL5	(line of trees) 33	Line of trees (poor condition)		

** Habitat types not listed as a primary habitat are indicated in brackets*

UK Hab Secondary Codes:
33 – line of trees
50 – ditch
111 – hedgebank

Table 4.1c. Habitat Descriptions and Evaluation – Watercourses

Ref	UK Hab Primary Habitat/ Secondary Codes*	Statutory Biodiversity Metric Habitat Type and Condition	Description	Evaluation
WC1	r2b other rivers and streams	Other rivers and streams (fairly poor to fairly good condition)	Watercourse WC1 flows east to west across the survey area and can be divided into three main sections in terms of its character. The eastern (WC1a) and western sections (WC1c) are located within woodland and support a more naturalised channel profile. The central section (WC1b) is modified in nature, and is situated between open grassland fields. The watercourse was recorded to support a shallow depth of water along most of its length (typically up to 15cm) albeit a deeper ponded section occurs in the eastern extent of WC1b where an earth bund supporting an access track dams the watercourse. The watercourse was recorded to be largely dry during summer 2024.	Does not form important ecological feature
WC2	r2b other rivers and streams	Other rivers and streams (moderate condition)	Watercourse WC2 flows south to north, joining WC1 at the eastern boundary of the survey area. It is similar in character to WC1c, being located within a wooded strip (W5) and has been assigned the same condition score.	Does not form important ecological feature
D1-D4	(ditch) r1g other standing water 50	Ditches (poor condition)	A number of ditches are present associated with the main watercourse WC1 (D2-D4), with a further ditch (D1) at the boundary of woodland W4 to the south. These are narrow ditches supporting only low water levels (being dry for much of the year) and support limited aquatic or marginal vegetation, being mostly heavily shaded.	Does not form important ecological feature

** Habitat types not listed as a primary habitat are indicated in brackets*

UK Hab Secondary Codes:
50 - ditch

4.6 Summary

4.6.1 On the basis of the above, the following habitats within and adjacent to the survey area are considered to form important ecological features:

Table 4.2. Evaluation summary of habitats forming important ecological features.

Habitat	Level of Importance
ASNW W1, W2, W6, W7	Local
Other lowland mixed deciduous woodland W3, W4, W5, W8, W11, W12, W13, W14	Local
Veteran trees T12, T14, T30, T31	Local
Native hedgerows H1, H3-H11	Local
Line of trees TL1-TL3	Local
Offsite ASNW W9, W10	Local
Offsite pond P2	Local

4.6.2 Other habitats present within the survey area include modified grassland, other neutral grassland, tall forbs, Bramble scrub, mixed scrub, Bracken, hardstanding, buildings, non-veteran trees, non-native hedgerows and lines of trees, watercourses and ditches. These habitats do not form important ecological features.

4.7 Assessment of Proposals

4.7.1 The proposed development has followed the mitigation hierarchy approach as set out under the National Planning Policy Framework (NPPF), with consideration given first to avoidance, followed by mitigation and compensation.

4.7.2 In line with this hierarchy, habitats forming important ecological features (namely woodland, trees and hedgerows) are largely retained under the proposals avoiding significant habitat losses, with built development focused within areas of lower value habitat, predominantly formed by modified grassland. Losses of these habitats, not forming important ecological features, will be addressed as part of the overall balance of biodiversity net gain.

4.7.3 A discussion of effects and any requirements for mitigation or compensation in relation to individual habitats of ecological importance is set out below.

Ancient Woodland

4.7.4 There is no loss of Ancient Woodland under the proposals, with all areas of ASNW located outside of the application boundary itself.

4.7.5 Residential development is proposed adjacent to the Ancient Woodlands W9 and W10. In these locations, a minimum 15m buffer will be maintained between built development and the woodland edge (in accordance with Policy DP37 under the adopted District Plan and emerging policy DPN4). Where practical, housing areas will be designed to face out onto these buffers, providing visual surveillance and avoiding gardens backing onto habitat, preventing issues such as informal garden extensions and flytipping. This will be further reinforced by provision of a hard edge to the built development where practical, in the form of roads or footpaths. This is currently shown within the illustrative layout, at Appendix 6482/1.

4.7.6 Additional planting will be provided within the buffers to strengthen the woodland edge, with the use of thorny species such as Hawthorn, Blackthorn and Holly to discourage informal access to the woodland. This will be reinforced where necessary with fencing and signage.

4.7.7 The drainage strategy will have specific regard to the Ancient Woodlands, with drainage features designed to maintain greenfield runoff rates and good water quality to avoid hydrological effects on the woodlands. In a number of locations, drainage basins and swales are proposed within the ancient woodland buffers, although the design of these will ensure that root protection areas are fully maintained and the water table is not negatively affected.

Other Woodlands

4.7.8 The majority of other woodlands are unaffected under the proposals, with all except W8 being located outside of the application boundary itself.

4.7.9 A cycle and pedestrian link is proposed through woodland W8. The proposed routing minimises loss of larger trees, whilst impacts on adjacent trees and woodland soils will be minimised through use of permeable surfacing. Accordingly, only minor losses of W8 will occur.

4.7.10 New woodland planting will be provided as part of the landscaping scheme to compensate for any woodland losses.

Veteran Trees

4.7.11 Veteran trees within the survey area are all located outside of the application boundary itself and accordingly will be unaffected under the proposals.

Hedgerows and Lines of Trees

4.7.12 Hedgerows and lines of trees are mostly located at the application boundary, such that they are fully retained under the proposals. The only hedgerow loss is along hedgerows H8a and H10 where breaks are to be provided for road access. New hedgerow planting will be provided under the landscaping scheme to compensate for any hedgerow losses.

Other Development Impacts

4.7.13 Standard measures will be implemented to minimise construction effects such as dust deposition and surface run-off of contaminants or silt, whilst implementation of a drainage strategy as part of the completed development will safeguard water quality in the long-term. Ongoing management of retained habitats and open spaces will allow for management of recreational activity to minimise disturbance to sensitive habitats and wildlife. Further detail is set out at Chapter 6 below.

5 Faunal Use of the Survey Area

5.1 Overview

5.1.1 During the survey work, general observations were made of any faunal use of the survey area with particular attention paid to the potential presence of protected or notable species. Specific survey work was undertaken in respect of Badger, bats, Dormouse, breeding birds, reptiles and Great Crested Newt, the results of which are set out below.

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, Section 41 of the NERC Act requires the Secretary of State to publish a list of species which are of principal importance for conservation in England. This list is largely derived from the 'Priority Species' listed under the former UK BAP, which continue to be regarded as Priority Species under the subsequent country-level biodiversity strategies.

5.2.2 During the survey work undertaken, the Priority Species Soprano Pipistrelle, Brown Long-eared Bat, Barbastelle, Noctule, Common Toad, Herring Gull, Common Starling, Song Thrush and Common Bullfinch were recorded within the survey area. This is 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 2017 (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 6482/5). If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats. Given all bats are protected species, they are considered to represent important ecological features. Several bat species are also S41 Priority Species.

5.3.2 **Background Records.** Records of bats from within or adjacent to the survey area returned from the desktop study include Nyctalus/Serotine sp., Pipistrelle *Pipistrellus sp.*, Common Pipistrelle *Pipistrellus pipistrellus***,** Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared Bat *Plecotus auritus*. Additional species recorded within the 5km search radius include, Serotine *Eptesicus serotinus* and Myotis *Myotis sp.* Species records returned date between 1992 and 2020.

Survey Results and Evaluation

Preliminary Appraisal

5.3.3 As detailed above, records of six bat species/species groups have been returned from within the surroundings of the survey area. The species recorded are largely typical given the region and the types of habitats present in the wider surroundings of the survey area, with only Serotine having a more restricted distribution within Southern England. No European designations are located within 10km of the survey area which are identified for their bat

interest, albeit Mole Valley to Reigate Escarpment SAC located 16km to the north is partly designated for a winter roost of Bechstein's bat *Myotis bechsteinii*.

5.3.4 Habitats within the wider surroundings of the survey area largely comprise open farmland, with relatively extensive woodland (including ancient woodlands) that are likely to be of elevated interest for bats. The survey area has good connectivity to surrounding woodland via the woodland which borders the survey area. In terms of built development, Crawley Down is located immediately to the east of the survey area, the large urban areas of Crawley and East Grinstead are located approximately 3km to the west and east respectively, and low density built development occurs along Copthorne Road (A264) to the north of the survey area. Land to the south however is largely undeveloped.

5.3.5 Within the survey area, several trees and buildings have been identified as potentially suitable to support roosting bats, detailed further below. A preliminary assessment of habitats in terms of their likely value for foraging and commuting bats is set out in Table 5.1 below.

Table 5.1. Assessment of value of habitats within the survey area for foraging and commuting bats

Commuting (potential flight-paths)	Foraging habitats
Woodland edge and associated hedgerow network forms continuous habitat that is well connected to the wider landscape – high potential suitability. Internal hedgerows across the remainder of the survey area more fragmented – moderate potential suitability. The vegetated watercourse running through the survey area is well connected to the woodlands and therefore the wider landscape – high potential suitability.	Woodland areas including woodland edge adjacent to survey area - high potential suitability. Internal grassland pasture is species-poor and unlikely to support foraging activity away from boundaries – low potential suitability.

Roosting – Buildings and Built Structures

Visual Inspection

5.3.6 Buildings B1-B7 within the survey area were subject to detailed inspection, the findings of which are set out below.

5.3.7 Buildings B1-B7 are located within the centre of the survey area, forming a collection of farm buildings. Buildings B2, B3 and B7 form large agricultural barns with brick built bases and concrete frame and corrugated steel / asbestos sheeting construction, in use for storage. B3 was noted to support several broken or missing panels on the roof and walls. B1 is a smaller single storey barn/stable of metal frame and corrugated steel / asbestos sheeting construction. Buildings B1-B3 and B7 offer some limited roosting opportunities from features such as overlapping sheeting and as such are assessed as providing low suitability for bats. No evidence of bat occupation, such as droppings, staining or feeding remains, was recorded within any of the buildings during the inspection surveys.

5.3.8 Buildings B4 and B5 are smaller buildings of brick and asbestos sheeting construction, now in a very poor state of repair and largely collapsed. These buildings are considered to offer negligible bat roosting potential due to their open, exposed nature. Building B6 is a metal

portable cabin / temporary structure with no features evident providing bat roosting potential. Accordingly this also provides negligible bat roosting potential.

Roosting – Trees

Assessment of Roosting Potential

5.3.9 Trees within the survey area were subject to an initial assessment for their suitability to support roosting bats, with trees that may be affected by development proposals subject to a ground level tree assessment (GLTA). Trees identified as supporting PRFs or identified as FAR are indicated on Plan 6482/ECO3. The results of this assessment are summarised in Table 5.2 below.

Table 5.2. Tree assessment results

Tree Ref.	Species	Assessment and potential roosting features	Summary
Tree Ref*	**Species**	**Assessment and potential roosting features**	**Summary**
T1 (5163)	Oak	Mature Oak with deadwood on westward facing limb, multiple other sections of dead limbs which are producing collars and potentially crevices.	PRF-M
T2 (5162)	Ash	Multi-stem Ash with relatively narrow stems only 20-30cm diameter, some Ivy cover.	Negligible potential
T3 (3018)	Oak	Mature Oak with several dead protruding limbs	PRF
T4 (3012)	Beech	Young multi-stem Beech with some diseased growth.	PRF
T5 (5091)	Ash	Semi-mature Ash with a single rot hole evident.	PRF
T6 (5114)	Ash	Semi-mature Ash with dense Ivy.	PRF
T7 (713)	Ash	Some minor deadwood noted.	FAR
T8 (5358)	Oak	Mature Oak with some deadwood features.	PRF
T9 (5357)	Oak	Large mature Oak. No features evident but could support some potential given size/age.	FAR
T10 (5346)	Oak	Large mature Oak. No features evident but could support some potential given size/age.	FAR
T11 (5345)	Oak	Mature Oak with deadwood features present.	PRF
T12 (5369)	Oak	Veteran Oak with deadwood features present.	PRF
T13 (1073)	Oak	Mature Oak with deadwood features present.	PRF
T14 (1068)	Oak	Veteran Oak with several features that could support roosting bats including large rot hole, and a horizontal crack forming a cavity.	PRF-M
T15 (4720)	Oak	Large mature Oak. No features evident but could support some potential given size/age.	FAR
T16 (2744)	Oak	Mature Oak with several knot holes and collars providing potential roost features.	PRF-M
T17 (2743)	Oak	Mature Oak with numerous collars, dead branches and splits evident.	PRF-M

Tree Ref.	Species	Assessment and potential roosting features	Summary
T18 (6000)	Oak	Mature Oak with several knot holes and collars providing potential roost features.	PRF-M
T19 (858)	Oak	Large mature Oak. No features evident but could support some potential given size/age.	FAR
T20 (4141)	Ash	Large mature Ash with knot holes which may lead to cavities.	PRF
T21 (3270)	Ash	Small split on limb.	PRF
T22 (3268)	Ash	Two transverse splits on large limbs.	PRF-M
T23 (3267)	Ash	Mature Ash with extensive rot and open rot holes/wounds on central trunk.	PRF-M
TG24 (3261-3265)	Ash	Several small Ash trees with die-back, potential features could be present.	FAR
TG25 (3259-3260)	Ash	Two medium sized Ash trees, one with knot holes, one with splits on collusion.	PRF-M
TG26 (G54)	Willow, Birch, Ash	Mostly collapsed Willow and Ash with die-back, could support potential features.	FAR
TG27	Ash	Several young trees. No bat potential evident.	Negligible potential
TG28	Various	Numerous young trees. No bat potential evident but not surveyed in detail.	FAR
T30 (5164)	Oak	Veteran Oak, may support potential features.	FAR
T31 (5160)	Oak	Veteran Oak, may support potential features.	FAR
T32 (6053)	Alder	Multistem Alder at watercourse margin, largely dead with deadwood and rot holes	PRF-M
W13	Various	Trees affected by proposed road access were subject to survey and were not recorded to support bat roosting features.	Negligible potential supported by affected trees
Other woodland and trees	Various	Other woodlands and trees not directly affected by development proposals and not subject to detailed survey, albeit potential features may be present.	FAR

**Tree numbers under tree survey are shown in brackets*

Evaluation

5.3.10 Overall, the survey area supports a large number of trees with bat roosting potential and is considered to be of local importance as a potential roosting resource.

Foraging and Commuting

Night-time Bat Walkover Surveys

5.3.11 A summary of the species recorded and numbers of registrations during the NBW surveys is set out in Tables 5.3 to 5.10 below.

Table 5.3. Results of the dusk walked transect on 1st August 2022

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	95	90	Areas of elevated bat registrations were recorded at listening point LP2 and between LP6 and LP7. These LPs are adjacent to areas of woodland habitat.
Soprano Pipistrelle	8	8	
Myotis sp.	2	2	
Total	**105**	**100**	

Table 5.4. Results of the dusk walked transect on 26th September 2022

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	1	25	Very low levels of bat activity recorded.
Soprano Pipistrelle	2	50	
Myotis sp.	1	25	
Total	**4**	**100**	

Table 5.5. Results of the dusk walked transect on 17th October 2022

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	135	89	Very high levels of activity between LP6 - LP10 which are associated with woodland edge habitat.
Soprano Pipistrelle	6	4	
Myotis sp.	11	7	
Total	**152**	**100**	

Table 5.6. Results of the dusk walked transect on 19th April 2023

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
No bats recorded.			

Table 5.7. Results of the dusk walked transect on 10th May 2023

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	114	83	High levels of activity between LP5 -LP10 which are associated with the watercourse and woodland edge habitat.
Soprano Pipistrelle	14	10	
'Big Bat' sp.	9	7	
Total	**137**	**100**	

Table 5.8. Results of the dusk walked transect on 11th May 2023 (dawn)

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	40	98	Moderate to high levels of bat activity was recorded between LP5 and LP9 which are associated with the watercourse and woodland edge habitat.
Soprano Pipistrelle	1	2	
Total	**41**	**100**	

Table 5.9. Results of the dusk walked transect on 12th June 2023

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	34	81	Low to moderate levels of activity recorded throughout the survey area.
Soprano Pipistrelle	3	7	
Myotis sp.	4	10	
Plecotus sp.	1	2	
Total	**42**	**100**	

Table 5.10. Results of the dusk walked transect on 3rd July 2023

Species	Number of Passes Recorded	Approximate % of Total Passes Recorded	Overview of Recorded Activity
Common Pipistrelle	129	87	The majority of the survey area had bat registrations recorded throughout with increased activity recorded between LP 5 and LP10.
Soprano Pipistrelle	17	11	
'Big Bat' sp.	2	1	
Total	**148**	**100**	

5.3.12 Throughout the survey work, bat registrations were recorded within all locations however higher levels of activity were recorded between LP5 and LP10 on average. These areas of higher activity are located adjacent to the western section of the watercourse and adjacent to the boundary woodland.

Automated Surveys

5.3.13 The results of the automated static bat surveys are summarised in Tables 5.11 to 5.13 below.

Table 5.11. Automated static bat survey summary for location SD1 (hedgerow H8 at the north-west of the survey area).

Species	No. registrations								Average registrations per night							% of total registrations
	2022			2023					2022			2023				
	Aug	Sept	Oct	April	May	June	July	Total	Aug	Sept	Oct	April	May	June	July	
Common Pipistrelle	526	1189	618	121	672	2073	1801	**7000**	75	170	88	17	96	296	257	**90.3**
Soprano Pipistrelle	62	49	30	30	189	108	125	**593**	9	7	4	4	27	15	18	**7.7**
Nathusius' Pipistrelle	-	-	-	2	-	1	-	**3**	-	-	-	<1	-	<1		**<0.1**
Pipistrelle sp.	-	-	-	-	1	4	1	**6**	-	-	-	-	<1	1	<1	**0.1**
Big Bat sp.	6	6	1	-	1	4	5	**23**	1	1	<1		<1	1	1	**0.3**
Myotis sp.	11	29	52	4	9	3	4	**112**	2	4	7	1	1	<1	1	**1.4**
Plecotus sp.	-	5	-	-	-	6	1	**12**	-	1	-	-	-	1	<1	**0.2**
Barbastelle	-	-	2	-	-	-	-	**2**	-	-	<1	-	-	-	-	**<0.1**
Total	**605**	**1278**	**703**	**157**	**872**	**2199**	**1937**	**7751**								

Table 5.12. Automated static bat survey summary for location SD2 (located within woodland W8 within the centre of the survey area).

Species	No. registrations								Average registrations per hour							% of total registrations
	2022			2023					2022			2023				
	Aug	Sept	Oct	April	May	June	July	Total	Aug	Sept	Oct	April	May	June	July	
Common Pipistrelle		1885	14516	205	1143	1020	3769	**22538**		269	2074	29	163	146	538	**93.9**
Soprano Pipistrelle		59	1103	10	11	46	75	**1304**		8	158	1	2	7	11	**5.4**
Nathusius' Pipistrelle		-	-	-	-	-	-	**0**		-	-	-	-	-	-	**0**
Pipistrelle sp.	*No	-	-	1	2	1	6	**10**	*No	-	-	<1	<1	<1	1	**<0.1**
Big Bat sp.	data	3	-	-	-	8	9	**20**	data	<1	-	-	-	1	1	**0.1**
Myotis sp.		41	-	-	33	23	17	**114**		6	-	-	5	3	2	**0.5**
Plecotus sp.		8	-	1	1	9	3	**22**		1	-	<1	<1	1	<1	**0.1**
Barbastelle		-	-	-	-	-	-	**0**		-	-	-	-	-	-	**0**
Total		**1996**	**15619**	**217**	**1190**	**1107**	**3879**	**24008**								

Table 5.13. Automated static bat survey summary for location SD3 (located adjacent to watercourse WC1 within the central eastern part of the survey area).

Species	No. registrations								Average registrations per hour							% of total registrations
	2022			2023					2022			2023				
	Aug	Sept	Oct	April	May	June	July	Total	Aug	Sept	Oct	April	May	June	July	
Common Pipistrelle	595	567	525	228	720	705	1157	**4497**	85	81	75	33	103	101	165	**90.0**
Soprano Pipistrelle	32	8	19	7	50	61	69	**246**	5	1	3	1	7	9	10	**4.9**
Nathusius' Pipistrelle	-	-	1	2	-	1	1	**5**	-	-	<1	<1	-	<1	<1	**0.1**
Pipistrelle sp.	8	-	-	-	1	4	2	**15**	1	-	-	-	<1	1	<1	**0.3**
Big Bat sp.	17	2	1	-	-	9	62	**92**	2	<1	<1	<1	-	1	9	**1.8**
Myotis sp.	12	4	7	19	16	10	3	**71**	2	1	1	3	2	1	<1	**1.4**
Plecotus sp.	41	-	-	4	6	9	10	**70**	6	-	-	1	1	1	1	**1.4**
Barbastelle	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	**0**
Total	**705**	**581**	**553**	**261**	**793**	**799**	**1304**	4996								

5.3.14 **Summary.** Across the seven months surveyed during 2022 and 2023, Common Pipistrelle was by far the most frequently recorded species at all locations. Static location SD1 (in the north-west of the survey area) recorded 7,751 bat registrations, with 90.3% of all registrations attributed to Common Pipistrelle. The next highest number of registrations was 7.7% for Soprano Pipistrelle, 1.4% to *Myotis* species, and the remainder to 'big bat' species, *Plecotus* species, unidentified Pipistrelle species, Nathusius' Pipistrelle and Barbastelle. Despite an equipment failure preventing data from being recorded in August 2022, static location SD2 (in the centre of the survey area) recorded the most registrations of the three locations. A total of 24,008 registrations were recorded, with 93.9% attributed to Common Pipistrelle, 5.4% to Soprano Pipistrelle, and the remainder to *Myotis* species, *Plecotus* species, 'big bat' species and unidentified Pipistrelle species. At static location SD3, adjacent to the watercourse in the central eastern part of the survey area, a total of 4996 registrations were recorded. Of these, 90% were attributed to Common Pipistrelle, 4.9% to Soprano Pipistrelle, 1.8% to 'big bat' species, 1.4% to *Plecotus* species, 1.4% to *Myotis* species, and the remainder to unidentified Pipistrelle species and Nathusius' Pipistrelle.

5.3.15 At location SD1, activity peaked in June 2023 with an average of 314 registrations per night. Peak activity at location SD2 was in October 2022, with an average of 2,231 registrations per night. At location SD3, activity peaked in July 2023 with an average of 186 registrations per night.

Evaluation

5.3.16 An evaluation of the importance of the bat assemblage, based on the methodology set out within the Bat Mitigation Guidelines[28], is set out in Table 5.14 below. The survey area is located within Southern England, with a score of 42% relative to the potential assemblage score. This is just below the threshold for county importance (45%). Accordingly, based on the assemblage score, the survey area is assessed as being of district importance for its bat assemblage.

Table 5.14. Evaluation of bat assemblage recorded within the survey area

Rarity category	Potentially occurring species (Southern England)		Species recorded within survey area	
	Species	Score	Species	Score
Widespread all geographies (score 1)	Common Pipistrelle Soprano Pipistrelle Brown long-eared Bat	3	Common Pipistrelle Soprano Pipistrelle Brown long-eared Bat[29]	3
Widespread in many geographies but not as abundant in all (score 2)	Whiskered Bat Brandt's Bat Daubenton's Bat Natterer's Bat Noctule	10	*Myotis* sp. (est. 2 species[30]) Noctule[31]	6

[28] Based on the methodology for assessing the importance of the bat assemblage within Reason, P.F. and Wray, S. (2023) UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. CIEEM.

[29] The *Plecotus* species that were recorded are likely to be the widespread and common Brown Long-eared Bat, rather than the very rare and localised Grey Long-eared Bat *Plecotus austriacus*.

[30] Given the difficulties associated with confidently identifying *Myotis* species based on call analysis alone, an indicative score for the number of widespread species (out of those occurring within the region) has been determined using professional judgement to inform the assessment of site assemblage. This is based on level of Myotis activity recorded, diversity of habitats present (providing habitat for different Myotis species) and records of species returned by the desktop study.

[31] Given the difficulties associated with confidently distinguishing between the 'big bat' species Noctule, Serotine and Leisler's Bat, professional judgement has been applied to assume presence of Noctule and Serotine.

Rarity category	Potentially occurring species (Southern England)		Species recorded within survey area	
	Species	Score	Species	Score
Rarer or restricted distribution (score 3)	Alcathoe Bat Serotine Leisler's Bat Nathusius' Pipistrelle	12	Serotine[32] Nathusius' Pipistrelle	6
Rarest Annex II species and very rare (score 4)	Greater Horseshoe Bat Lesser Horseshoe Bat Bechstein's Bat Barbastelle Grey Long-eared Bat	20	Barbastelle	4
Total	**45**		**19 (42% of potential score)**	

5.3.17 In terms of individual species, Common Pipistrelle and Soprano Pipistrelle are considered to form ecologically important features at the local level. Other species occurred only infrequently and are not considered to be of particular importance outside of a site context.

Assessment of Proposals

Roosting

Buildings and Built Structures

5.3.18 All buildings are located outside of the application boundary and are buffered by open space. Accordingly these will not be impacted under the proposals.

Trees

5.3.19 Trees and areas of woodland are mostly retained under the proposals, such that the potential roosting resource is largely maintained. Notably infield trees T16, T17 and T18 are incorporated with appropriate buffers under the illustrative layout (see Appendix 6482/1). The proposals do include a road access through H8b which will likely affect tree group TG24. These trees were not recorded to support particular roosting features although are suffering from die back, such that features could develop and further inspection is recommended prior to removal. The cycle and pedestrian link through W8 will also involve the removal of a small number of trees, again mostly young Ash suffering from die back. These were not recorded to support particular bat roosting features, although have not been subject to detailed inspection. Accordingly, further survey will be undertaken to confirm bat roosting potential and inform the detailed design of this link.

5.3.20 As set out at Chapter 6, a sensitive lighting scheme will be implemented with particular regard given to trees with bat roosting potential where these lie adjacent to residential areas to minimise disturbance to any roosting bats that may be present.

5.3.21 Subject to the implementation of the recommendations set out at Chapter 6 below in regard to tree inspections and lighting, it is considered that roosting bats will be safeguarded under the proposals.

Foraging and Commuting

5.3.22 The majority of the woodland, trees and hedgerows within the application boundary are to be retained and buffered under the proposals. Accordingly, the main features of importance

[32] Given the difficulties associated with confidently distinguishing between the 'big bat' species Noctule, Serotine and Leisler's Bat, professional judgement has been applied to assume presence of Noctule and Serotine.

for foraging and commuting bats will be maintained, whilst habitat creation and enhancement with proposed open space should increase the value of these areas for bats. Notably, a large area of open space is proposed in the southern part of the application site (within F2), which will incorporate woodland and scrub planting and wildflower grassland creation, providing an enhanced foraging resource and strengthening existing commuting routes.

5.3.23 A sensitive lighting scheme will be implemented as detailed further at Chapter 6. This will include particular consideration of the hedgerows and woodland edges bordering the areas of residential development, and points where emergency, cycle and pedestrian accesses are proposed across woodland and hedgerow corridors, to ensure that these areas remain suitable for more light sensitive bat species.

5.3.24 Accordingly, subject to the implementation of the recommendations outlined at Chapter 6 below, along with other ecological enhancements, it is considered that the conservation status of local bat populations will be fully safeguarded under the scheme.

5.4 Badger

5.4.1 **Legislation.** Badger receives legislative protection under the Protection of Badgers Act 1992 (see Appendix 6482/5), and as such should be assessed as an important ecological feature. The legislation aims to protect this species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain.

5.4.2 Licences can be obtained from Natural England for development activities that would otherwise be unlawful under the legislation. The types of activity that should be licensed are described in the relevant best practice guidance. [33, 34]

5.4.3 **Survey Results and Evaluation.** Survey results and evaluation in respect of Badger are set out in a Confidential Appendix separate to this report.

5.5 Dormouse

5.5.1 **Legislation.** Dormouse 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 2017 (as amended). Such legislation affords protection to individuals of the species and their breeding sites and places of rest (see Appendix 6482/5). Dormouse is also a S41 Priority Species. On this basis, Dormouse is considered to form an important ecological feature.

5.5.2 **Background Records.** No records of Dormouse were returned from the desktop study.

5.5.3 **Survey Results and Evaluation.** The survey area contains suitable habitat for Dormouse in the form of areas of woodland edge, woodland and hedgerows and, to a lesser extent, scrub. However, the majority of the survey area is dominated by open grassland fields which are unsuitable for Dormouse. As the survey area does contain suitable habitats to support Dormice, further surveys were undertaken in the form of nest tube surveys, erected in August 2022 and checked on subsequent visits in September 2022, November 2022, May 2023 and mid-July 2023.

[33] English Nature (2002) *Badgers and Development*

[34] Natural England (2011) *Badgers and Development: A Guide to Best Practice and Licensing, Interim Guidance Document*

5.5.4 During the survey visits, no evidence of Dormouse was recorded within the nest tubes, with an absence of individuals or any characteristic nests (see Plan 6482/ECO5). Accordingly, Dormouse is considered to be absent from the survey area and its immediate surrounds and is not considered to form an ecological constraint.

5.6 Water Vole and Otter

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. As such, this species is considered to represent an important ecological feature. The legislation affords protection to individuals of the species and their breeding sites and places of shelter (see Appendix 6482/5 for detailed provisions).

5.6.2 If, despite all reasonable efforts, properly authorised development will adversely affect Water Vole and there are no alternative habitats nearby, Natural England may issue a licence to displace or trap and translocate Water Vole for the purpose of development. To issue such a licence, Natural England would need to be assured there is no reasonable alternative to the development and that there are no other practical solutions that would allow Water Vole to be retained at the same location. Natural England would also require no net loss of Water Vole habitat resulting from the works.

5.6.3 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 2017 (as amended). Such legislation affords protection to individuals of the species and their breeding sites and places of rest (see Appendix 6482/5 for detailed provisions). Otter is also a S41 Priority Species. On this basis, Otter is considered to represent an important ecological feature.

5.6.4 **Background Records.** No records of Water Vole within or adjacent to the survey area were returned by the desktop study. Records of Water Vole were returned from the wider search area, with the closest specific record of this species from a location approximately 450 meters west of the survey area from 1981. No records of Otter were returned from within the 2km search area.

5.6.5 **Survey Results and Evaluation.** The habitats within the survey area are generally unsuitable for Water Vole and Otter, mostly comprising open grassland. The survey area does contain watercourses WC1 and WC2 and some ditches which provide limited suitability for these species. However, the majority of WC1 and WC2 and the ditches are within woodland which heavily overshades the watercourses, limiting establishment of marginal vegetation meaning there is very limited foraging resources for Water Voles. The watercourses and ditches also supported only low water levels, and lack connectivity to more suitable areas of habitat for Water Vole or Otter. The watercourses and ditches have been subject to detailed inspections during the habitat surveys and MoRPH survey during which no evidence of Water Vole or Otter was observed. On this basis, Water Vole and Otter are considered to be absent and do not form a constraint under the proposals.

5.7 Other Mammals

5.7.1 **Legislation.** Other UK mammal species do not receive direct legislative protection relevant to development activities but may receive protection against acts of cruelty (for example, under the Wild Mammals (Protection) Act 1996). Some other mammal species, such as Hedgehog, Brown Hare and Harvest Mouse are S41 Priority Species and should be assessed as important ecological features.

5.7.2 **Background Records.** No specific records of other mammals from within or adjacent to the survey area were returned from the desktop study. Records of Hedgehog *Erinaceus europaeus* (Priority Species) and European Rabbit *Oryctolagus cuniculus* were returned by the desk study. The closest Hedgehog record was approximately 270m east of the survey area, dating from 2012. The closest European Rabbit record was approximately 280m south of the survey area, dating from 2006.

5.7.3 **Survey Results and Evaluation.** No evidence of any other protected, rare or notable mammal species was recorded within the survey area. Other mammal species likely to utilise the survey area, such as Fox Vulpes vulpes, remain common in both a local and national context, and as mentioned above do not receive specific legislative protection in a development context. As such, these species are not a material planning consideration and the loss of potential opportunities for these species to the proposals is of negligible significance.

5.7.4 The desktop study returned records of Hedgehog. Hedgehog are a Priority Species, despite being relatively common and widespread in England. The survey area contains habitats that may be used by these species, although given the size of the survey area and Hedgehog are assessed as being of potential importance at a site level only.

5.7.5 **Assessment of Proposals.** Habitat losses arising from the proposals are not considered likely to have significant effects on Hedgehog. For Hedgehog, habitat losses would be offset by the provision of new gardens and open space. Precautionary safeguards are recommended to minimise the risk of harm to other mammals that may be present. Enhancement measures to maintain habitat connectivity for Hedgehog are recommended, as set out in Chapter 6 below.

5.8 Reptiles

5.8.1 **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 2017 (as amended), as set out at Appendix 6482/5. All six reptile species are also S41 Priority Species. As such, all reptile species should be assessed as important ecological features.

5.8.2 **Background Records.** Information returned from the desk study included records of Grass Snake *Natrix natrix* and Slow-worm *Angius fragilis*. One record of Grass Snake was returned from within the survey area, dating from 2014.

5.8.3 **Survey Results and Evaluation.** Specific survey work for reptiles was undertaken at the survey area, as shown on Plan 6482/ECO6 and summarised in Table 5.15 below.

Table 5.15. Reptile survey results.

Visit	Date	Common Lizard		Slow Worm		Grass Snake	
		Adult	Juv.	Adult	Juv.	Adult	Juv.
1	12/04/2023	-	-	-	-	-	-
2	18/05/2023	-	-	-	-	-	-
3	21/04/2023	-	-	-	-	-	-
4	24/04/2023	-	-	-	-	-	-
5	04/05/2023	-	-	-	-	-	1
6	10/05/2023	-	-	-	-	-	5
7	17/05/2023	-	-	-	-	1	5
8	19/05/2023	-	-	-	-	1	9
9	22/05/2023	-	-	-	-	1	5
Peak Adult Count		**0**		**0**		**1**	

5.8.4 A peak count of a single adult Grass Snake was recorded, with the adults located on transects D and E within the southern fields as shown on Plan 6482/ECO6. Juveniles were recorded on transects A and C-G, indicating this species is relatively widespread within the southern and central parts of the survey area, possibly associated with offsite pond P1. A peak count of a single adult is considered to be a low population under the standard guidance[35]. As such, it is considered that the population of reptiles supported by the study area is of importance at the local level only.

5.8.5 **Assessment of Proposals.** Grass Snake was not recorded from the application boundary itself, such that this species is unlikely to be affected under the proposals. Indeed, establishment of more diverse grassland and scrub mosaics within open space and new wetland creation as part of the drainage scheme will likely benefit this species. As such, no specific mitigation is required in relation to this species, although in the unlikely event individuals are present, they should be protected by standard wildlife safeguarding measures as detailed at Chapter 6.

5.9 Amphibians

5.9.1 **Legislation.** All British amphibians 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 listed as a European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended). As such, both Great Crested Newt and habitats used by this species are afforded protection (see Appendix 6482/5). Great Crested Newt is also a S41 Priority Species, as are Common Toad *Bufo bufo*, Natterjack Toad *Epidalea calamita*, and Pool Frog *Pelophylax lessonae*. As such, these species should be assessed as important ecological features.

5.9.2 **Background Records.** The records returned from the data search include records of Great Crested Newt *Triturus cristatus*, Palmate Newt *Lissotriton helveticus*, Smooth Newt *Lissotriton vulgaris*, Common Frog *Rana temporaria* and Common Toad *Bufo Bufo*, with none of the records within or adjacent to the survey area. The closest record of Great Crested Newt is approximately 550m north east of the survey area, dating from 2016.

5.9.3 **Survey Results and Evaluation.** Based on a review of OS mapping and survey work, 8 ponds were identified for survey within 250m of the survey area (see Plan 6482/ECO7). These

[35] Herpetofauna Groups of Britain and Ireland (1998) Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards

ponds were subject to eDNA surveys during June 2024 to confirm presence or absence of Great Crested Newt.

5.9.4 Two of the ponds, P2 and P5, recorded a positive result from the eDNA testing, indicating presence of Great Crested Newt. These ponds are located approximately 25m and 100m from the survey area respectively. The results were negative from the remaining ponds. During the survey work completed at the survey area, Common Toad have been confirmed present (recorded under refugia during the reptile survey).

5.9.5 **Assessment of Proposals.** Ponds P2 and P5 supporting Great Crested Newt lie more than 250m for the application boundary itself, such that Great Crested Newt is unlikely to be affected by the proposals. As such, no specific mitigation is required in relation to this species, although it is recommended that a watching brief is maintained in the unlikely event individuals are present, as detailed at Chapter 6.

5.10 Birds

5.10.1 **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 special penalties apply to legal offences (see Appendix 6482/5).

5.10.2 **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 status[36]. 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 level or rapid rate of population decline (>50% over the past 25 years). Numerous birds are also S41 Priority Species. Red and Amber listed species and Priority Species should be assessed as important ecological features.

5.10.3 **Background Records.** Information from the data search included records for several Priority bird species in the vicinity of the survey area, including Cuckoo *Cuculus canorus*, Tree Pipit *Anthus trivialis,* Tree Sparrow *Passer montanus*, Turtle Dove *Streptopelia turtur*, Yellowhammer *Eberiza citronella*, Linnet *Linaria cannabina*, Marsh Tit *Poecile palustris*, House Sparrow *Passer domesticus*, Starling *Sturnus vulgaris*, Song Thrush *Turdus philomelos*, Bullfinch *Pyrrhula purrhula* and Dunnock *Prunella modularis*. None of these originate from the survey area itself.

5.10.4 Several species recorded within the search area are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), as well as the species mentioned above. These including Red Kite *Milvus milvus*, Firecrest *Regulus ignicapilla*, Hobby *Falco Subbuteo* and Kingfisher *Alcedo atthis*.

5.10.5 **Survey Results and Evaluation.** Specific breeding bird surveys were undertaken within the survey area in April to June 2023. A total of 38 species of birds was recorded during the three surveys, of which 26 were considered to be breeding. The remaining 12 species were

[36] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. and Win I. (2021).*'The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain.* British Birds *114*, p.p. 723-747.

recorded either in adjacent habitats, as migrants or flying over, or were represented only by non-breeding individuals.

5.10.6 A list of species during the 2023 surveys is set out in Table 5.16 below and on Plan 6482/ECO8.

Table 5.16 Bird species recorded during the breeding bird surveys

Systematic List of species (and BTO species code)	**RSPB listed**	**Est. no. pairs**	**Notes**
Canada goose (CG) *Branta canadensis*	Feral	0	A pair flew over in April.
Mallard (MA) *Anas platyrhynchos*	Amber	0	Three flew over in May.
Pheasant (PH) *Phasianus colchicus*	Feral	1	
Stock dove (SD) *Columba oenas*	Amber	1	
Woodpigeon (WP) *C. palumbus*	Amber	8	
Herring gull (HG) *Larus argentatus*	Red	0	One flew over in May.
Buzzard (BZ) *Buteo buteo*		0	Two present in April.
Sparrowhawk (SH) *Accipiter nisus*	Amber	0	A nest just offsite to the west.
Tawny owl (TO) *Strix aluco*	Amber	1	
Green woodpecker (G.) *Picus viridis*		0	One flew over in May.
Great spotted woodpecker (GS) *D. major*		1	
Kestrel (K.) *Falco tinnunculus*	Amber	0	One present in June.
Jay (J.) *Garrulus glandarius*		0	One flew over in May.
Magpie (MG) *Pica pica*		1	
Jackdaw (JD) *Corvus monedula*		2	
Carrion crow (C.) *C. corone*		1	
Blue tit (BT) *Cyanistes caeruleus*		10	
Great tit (GT) *Parus major*		4	
Coal tit (CT) *Periparus ater*		1	
Swallow (SL) *Hirundo rustica*	Amber	0	Foraging over the fields.
Long-tailed tit (LT) *Aegithalos caudatus*		1	
Chiffchaff (CC) *Phylloscopus collybita*		1	
Blackcap (BC) *Sylvia atricapilla*		5	
Whitethroat (WH) *Curruca communis*	Amber	1	
Goldcrest (GC) *Regulus regulus*		1	
Firecrest (FC) *Regulus ignicapilla*	Sch.1	0	One singing just offsite to the south in April.
Wren (WR) *Troglodytes troglodytes*	Amber	12	
Nuthatch (NH) *Sitta europaea*		3	
Starling (SG) *Sturnus vulgaris*	Red	0	12 flew over in May.
Blackbird (B.) *Turdus merula*		12	
Song thrush (ST) *T. philomelos*	Amber	2	
Robin (R.) *Erithacus rubecula*		15	
Dunnock (D.) *Prunella modularis*	Amber	4	
Chaffinch (CH) *Fringilla coelebs*		1	
Bullfinch (BF) *Pyrrhula pyrrhula*	Amber	1	
Greenfinch (GR) *Chloris chloris*	Red	1	
Linnet (LI) *Linaria cannabina*	Red	0	A pair present in April.
Goldfinch (GO) *Carduelis carduelis*		1	

5.10.7 Based on the survey results, the survey area supports a reasonably diverse assemblage of breeding birds that is entirely typical of the woodland habitats that are present. The vast majority of breeding activity is associated with the woodland, and there is almost no breeding activity in the open fields, with no declining farmland species present. On this basis, the assemblage of birds supported by the survey area is considered to be of importance at the local level.

5.10.8 The most notable species recorded was Firecrest, with one singing just offsite to the south in April. Firecrest is protected under Schedule 1 of the 1981 Wildlife and Countryside Act (as amended), although it has enjoyed a huge increase in population in southern England in recent years, and is now common in suitable woodland habitat in the Crawley area.

5.10.9 **Assessment of Proposals.** Overall, the survey area is considered to support a reasonably diverse bird assemblage, although species are largely associated with the woodland areas, with almost no breeding activity in the open fields that would be directly impacted under the proposals. On this basis, the bird assemblage is unlikely to be significantly impacted by the proposed development.

5.10.10 Where small areas of wooded vegetation, trees and hedgerows are to be lost under the proposals, this could potentially affect any nesting birds that may be present at the time of works. Accordingly, a number of safeguards in respect of nesting birds are proposed, as detailed in Chapter 6 below. In the long-term, new nesting opportunities will be available for birds as described in Chapter 6 below.

5.11 Invertebrates

5.11.1 **Legislation.** Various 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 2017 (as amended), as set out at Appendix 6482/5. Some invertebrates are also S41 Priority Species. Where such species are present, they should be assessed as important ecological features.

5.11.2 **Background Records.** Records returned from the desktop study include several species within or adjacent to the survey area that are considered UK BAP Priority, including Ghost Moth *Hepialus humuli*, Knot Grass *Acronicta rumicis*, Beaded Chestnut *Agrochola lychnidis*, Ear Moth *Amphipoea oculea*, Dusky Brocade *Apamea remissa*, Centre-barred Sallow *Atethmia centrago*, Sallow *Cirrhia icteritia*, Small Square-spot *Diarsia rubi*, Figure of Eight *Diloba caeruleocephala*, Small Phoenix *Ecliptopera silaceata*, Dusky Thorn *Ennomos fuscantaria*, Ghost Moth *Hepialus humuli*, Rustic *Hoplodrina blanda*, Rosy Rustic *Hydraecia micacea*, Shoulder-striped Wainscot *Leucania comma*, Brindled Beauty *Lycia hirtaria*, Lackey *Malacosoma neustria*, Dot Moth *Melanchra persicariae*, White Ermine *Spilosoma lubricipeda*, Buff Ermine *Spilosoma lutea*, Feathered Gothic *Tholera decimalis*, Cinnabar *Tyria jacobaeae* and Oak Hook-tip *Watsonalla binaria*. In addition classified as 'Sussex Rare' include the following: Red-green Carpet *Chloroclysta siterata*, Orange Footman *Eilema sororcula*, Great Oak Beauty *Hypomecis roboraria* and Satin Lutestring *Tetheella fluctosa*.

5.11.3 Other UK BAP Priority species within 2km of the survey area include: Grey Dagger *Acronicita psi*, Brown-spot Pinion *Agrochola litura*, Green-brindled Crescent *Allohyes oxyacanthae*, Mouse Moth *Amphipyra tragopoginis*, Deep-brown Dart *Aporophyla lutulenta*, Sprawler *Asteroscopus sphinx*, Minor Shoulder-knot *Brachylomia viminalis*, Mottled Rustic *Caradrina morp*heus, Broom Moth *Ceramica pisi*, Streak *Chesias legatella*, Latticed Heath *Chiasmia clathrate*, False Mocha *Cyclophora porata*, Oak Lutestring *Cymatophorinadiluta hartwiegi*, Small Square-spot *Diarsia rubi*, September Thorn *Ennomos erosaria*, August Thorn *Ennomos fuscantaria*, Autumnal Rustic *Eugnorisma glareosa*, Rosy Minor *Litoligia literosa*, Pretty Chalk Carpet *Melanthia procellata*, Powdered Quaker *Orthosia gracilis*, Large Wainscot *Rhizedra lutosa*, Shaded Broad-bar *Scotopteryx chenopodiata*, Hedge Rustic *Tholera cespitis*, Blood-vein *Timandra comae*, Pale Eggar *Trichiura crataegi*, Dark-barred Twin spot Carpet *Xanthorhoe ferrugata*, Heath Rustic *Xestia agathina*, Neglected Rustic *Xestia*

castanea, Small Heath *Coenonympha pampilus*, White Admiral *Limenitis camillam* Beautiful Pearl *Agrotera nemoralis*, Dark Crimson Underwing *Catocala sponsa*, Olive Crescent *Trisateles emortualis*, Light Crimson Underwing *Catocala promissa*, Crescent He*lotropha leucostigma*, Dark Spinach *Pelurga comitata* and Grass Rivulet *Perizoma albulata albulata*.

5.11.4 **Survey Results and Evaluation.** No evidence for the presence of any protected, rare or notable invertebrate species was recorded within the survey area. The survey area is dominated by species-poor grassland fields which are likely to support a very limited diversity of invertebrates, containing few micro-habitats that would typically indicate elevated potential for invertebrates[37], such as a variable topography with areas of vertical exposed soil, areas of species-rich semi-natural vegetation; variable vegetation structure with frequent patches of tussocks combined with short turf; free-draining light soils; walls with friable mortar or fibrous dung. Habitats such as Ancient Woodland may support elevated invertebrate interest, although these are retained under the proposals. Accordingly, given the habitat composition of the survey area and lack of adjacent sites designated for significant invertebrate interest, it is considered unlikely that the proposals will result in significant harm to any protected, rare or notable invertebrate populations, and invertebrates are not considered to form a constraint to the proposals.

5.11.5 **Assessment of Proposals.** Habitats affected by the proposed development are unlikely to support an important invertebrate assemblage and therefore the proposals are unlikely to result in harm to protected, rare or notable invertebrate populations.

5.12 Summary

5.12.1 On the basis of the above, a summary of the evaluation of fauna is provided below:

Table 5.17. Evaluation summary of fauna forming important ecological features

Species / Group	Summary	Level of Importance
Bats – Roosting	Potential habitat in the form of trees and buildings	Local
Bats – Foraging / Commuting (assemblage)	Confirmed presence with moderate assemblage of foraging and commuting bats	District
Bats – Foraging / Commuting (Common and Soprano Pipistrelle)	Moderate levels of activity recorded	Local
Badger	See Confidential Appendix	See Confidential Appendix
Hedgehog	Potential habitat present	Site
Great Crested Newt	Confirmed presence within offsite ponds	Local
Reptiles	Confirmed presence of Grass Snake	Local
Birds	Confirmed presence with reasonably diverse assemblage of woodland birds	Local

5.12.2 Other fauna supported by the survey area include non-priority species of mammals, amphibians and invertebrates. These species do not form important ecological features.

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

6 Mitigation, Compensation and Enhancement

6.1 Mitigation and Compensation

6.1.1 As set out in the previous chapters, the proposed development has followed the mitigation hierarchy approach as set out under the National Planning Policy Framework (NPPF), with consideration given first to avoidance, followed by mitigation and compensation.

6.1.2 Based on the assessment of the proposals and ecological designations, habitats and associated fauna identified within or adjacent to the survey area, it is proposed that the following mitigation and compensation measures (**MC1-MC14**) are implemented under the proposals. Further detailed mitigation strategies or method statements can be secured via suitably-worded planning conditions, as recommended by relevant best practice guidance (BS 42020:2019).

Ecological Designations

6.1.3 The survey area is not subject to any statutory or non-statutory ecological designations and it is unlikely that any such designations in the surrounding area will be significantly affected by the proposals.

6.1.4 Further discussion of potential effects and mitigation requirements in relation to Ashdown Forest SAC/SPA is given in the accompanying Report to Inform a Habitats Regulations Assessment.

Habitats

6.1.5 The proposed development would require the loss of small sections of hedgerows H8a and H10 for road access, whilst some minor losses may occur within W8 for pedestrian and cycle access. Other important habitats including Ancient Woodland, veteran trees, other woodlands, hedgerows and lines of trees are retained under the proposals. Compensation for losses of important habitats are set out below, together with protective measures and design considerations. Losses of non-important features will be addressed as part of the BNG strategy.

6.1.6 **MC1 – Hedgerow and Tree Protection.** All hedgerows and trees to be retained within the proposed development will be protected during construction in line with standard arboricultural best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This may require the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees and hedgerows.

6.1.7 **MC2 – Ancient Woodland Buffers.** Buffers will be maintained between built development and Ancient Woodland (at least 15m in width). Where practical, housing areas will be designed to face out onto these buffers, providing visual surveillance and avoiding gardens backing onto habitat, preventing issues such as informal garden extensions and flytipping. This will be further reinforced by provision of a hard edge to the built development where practical, in the form of roads or footpaths. Additional planting will be provided within the buffers to strengthen the woodland edge, with the use of thorny species such as Hawthorn, Blackthorn and Holly to discourage informal access to the woodland. This will be reinforced where necessary with fencing and signage.

6.1.8 **MC3 – Ancient Woodland and Drainage Strategy.** The drainage strategy will have specific regard to the Ancient Woodlands, with drainage features designed to maintain greenfield runoff rates and good water quality to avoid hydrological effects on the woodlands. In a

number of locations, drainage basins and swales are proposed within the ancient woodland buffers, although the design of these will ensure that root protection areas are fully maintained and the water table is not negatively affected.

6.1.9 **MC4 – Access Links Through Woodland.** The detailed design of the cycle and pedestrian access through W8 will look to minimise impacts to the woodland, with use of a no-dig approach and permeable surfacing.

6.1.10 **MC5 – New Woodland and Hedgerow Planting.** To compensate for the minor loss of W8 and short sections of hedgerows, new native woodland and hedgerow planting will be provided. This will also ensure a minimum 10% gain in habitats and hedgerow biodiversity value and will be secured as part of the BNG strategy.

6.1.11 **MC6 – Pollution Prevention.** In order to safeguard downstream habitats against pollution arising from potential run-off or pollution events during construction, the following safeguards will be implemented:

- Storage areas for chemicals and fuels should be sited well away from ditches or identified flow paths (minimum 10m). Storage areas should be provided with an impervious base and set within an oil-tight bund with no drainage outlet. Spill kits with sand, earth or commercial products approved for the stored materials should be kept close to storage areas for use in case of spillages;
- Where possible, and with prior agreement of the sewage undertaker, silty water should be disposed of to the foul sewer or via another suitable form of disposal, such as transport by tanker for off-site disposal;
- Water washing of vehicles, particularly those carrying fresh concrete and cement, or mixing plant should be carried out in a contained area located away from ditches or identified flow paths (minimum 10m); and
- Refuelling of plant and vehicles should take place within a designated area, on an impermeable surface, away from ditches or identified flow paths (minimum 10m).

6.1.12 Post-development, the drainage system for the development will ensure downstream habitats are not subject to adverse changes in surface water run-off or quality.

<u>Bats</u>

6.1.1 All trees identified as supporting potential roosting habitat are retained outside of built development areas, although additional inspections will be undertaken where trees are to removed within woodland W8 and along hedgerow H8a (TG24). Impacts on foraging and commuting bats will be minimised by implementation of a sensitive lighting design, as detailed further below.

6.1.2 **MC7 – Update Tree Inspections.** Trees to be removed under the proposals (namely within woodland W8 and TG24) will be subject to an update tree inspection by a suitably qualified ecologist prior to felling to confirm absence of potential roosting features. This will include climbing inspections if required to assess any features that may be present within tree canopies.

6.1.3 If any evidence for the presence of roosting bats is recorded, works on that tree will be suspended and consideration will be given to the need to undertake works under a European Protected Species (EPS) development licence, and a licence application will be made to Natural England as required.

6.1.4 **MC8 – Sensitive Lighting.** Light-spill onto retained and newly created habitat, in particular trees with bat roosting potential, woodland edges, hedgerows and the watercourse corridor, will be minimised in accordance with good practice guidance[38] to reduce potential impacts on light-sensitive bats (and other nocturnal fauna). This will be achieved through the implementation of a sensitively designed lighting strategy, with consideration given to the following key factors:

- **Light exclusion zones –** lighting should be controlled in areas likely to be used by bats, notably the open space areas and Ancient Woodland buffers. Light exclusion zones or 'dark buffers' may be used to provide interconnected areas free of artificial illumination to allow bats to move around the site;
- **Appropriate luminaire specifications** – consideration should be given to the type of luminaires used, in particular luminaries should lack UV elements and metal halide and fluorescent sources should be avoided in preference for LED luminaries. A warm white spectrum (ideally <2,700K) should be adopted to reduce the blue light component;
- **Light barriers / screening –** new planting (e.g. hedgerows and trees) or fences, walls and buildings can be strategically positioned to reduce light spill;
- **Spacing and height of lighting units –** increasing spacing between lighting units will minimise the area illuminated and allow bats to fly in the dark refuges between lights. Reducing the height of lighting will also help decrease the volume of illuminated space and give bats a chance to fly over lighting units (providing the light does not spill above the vertical plane). Low level lighting options should be considered for any parking areas and pedestrian / cycle routes, e.g. bollard lighting, handrail lighting or LED footpath lighting;
- **Light intensity –** light intensity (i.e. lux levels) should be kept as low as possible to reduce the overall amount and spread of illumination;
- **Directionality –** to avoid light spill lighting should be directed only to where it is needed. Particular attention should be paid to avoid the upward spread of light so as to minimise trespass and sky glow;
- **Dimming and part-night lighting –** lighting control management systems can be used, which involves switching off/dimming lights for periods during the night, for example when human activity is generally low (e.g. 12.30 – 5.30am). The use of such control systems may be particularly beneficial during the active bat season (April to October). Motion sensors can also be used to limit the time lighting is operational.

Nesting Birds

6.1.5 Small areas of wooded vegetation and trees are to be removed under the proposals. Accordingly, the following approach will be adopted in relation to nesting birds.

6.1.6 **MC11 – Nesting Bird Restrictions.** To avoid a potential offence under the relevant legislation, no clearance of suitable vegetation should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, any potential

[38] Bat Conservation Trust and Institute of Lighting Professionals (2018) *Guidance Note 08/18: Bats and artificial lighting in the UK;* Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation guidance;* ILP (2011) *Guidance notes for the reduction of obtrusive light. Institution of Lighting Professionals,* GN01:2011.

nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance.

Other Fauna

6.1.7 The application boundary has been identified as offering potential for other mammal species including Hedgehog, whilst reptiles and Great Crested Newt have been recorded from the wider survey area. Accordingly, the following approach will be adopted during site clearance and construction works.

6.1.8 **MC12 – General Wildlife Safeguards.** In order to safeguard Hedgehog and other wildlife during construction works, the following measures will be implemented:

- A watching brief should be maintained for Hedgehog, Brown Hare, reptiles, Great Crested Newt and other small mammals throughout any clearance works;
- If Great Crested Newt is encountered at any point during works, these should stop and a suitably qualified ecologist should be contacted immediately for advice and consideration given to licensing;
- Any trenches left open overnight should be provided with a means of escape, e.g. gently graded ramp or a roughened plank, in order to allow animals to escape should they enter the trench. This is particularly important if the trench fills with water;
- Any temporarily exposed open pipes or open drains should be blanked off at the end of each working day so as to prevent animals gaining access as may happen when contractors are off-site;
- Any trenches/pits should be inspected each morning to ensure no animals have become trapped overnight;
- The storage of any chemicals at the site will be contained in such a way that they cannot be accessed or knocked over by any roaming animals;
- Fires will only be lit in secure compounds away from wooded habitats and will not be allowed to remain lit during the night;
- Unsecured food and litter will not be left within the working area overnight;
- Any piles of material already present on site, particularly vegetation/leaves, etc. and any areas of dense scrub or hedgerows, shall be dismantled/removed by hand and checked for Hedgehog, reptiles, amphibians or other wildlife prior to the use of any machinery/disposal;
- Any material to be disposed of by burning, particularly waste from vegetation clearance and tree works, should not be left piled on site for more than 24 hours in order to minimise the risk of Hedgehogs or other animals occupying the pile. If this cannot be avoided, material should be stored within a container such as a skip to prevent animals from gaining access. Any material which has been stored on the ground overnight should be moved prior to burning to allow a thorough check for any animals which may have been occupying the pile;

- In the event that an injured mammal is found, the animal should be wrapped carefully in a towel and taken to a local vet immediately. If an injured Hedgehog is found the British Hedgehog Preservation Society (BHPS) can be phoned (01584 890 801).

6.1.9 **MC13 – Faunal Habitat Connectivity.** To maintain connectivity throughout the site for Hedgehog and other small mammals and to allow access to suitable foraging habitat contained within residential gardens, small holes (13cmx13cm) should be created within garden fences or under gates.

Invasive Species

6.1.10 **MC14 – Invasive Species Safeguards.** Japanese Knotweed, which is listed on Schedule 9 Part II of the Wildlife and Countryside Act 1981, was recorded within the wider survey area, albeit outside of the application boundary. It is an offence to cause to grow in the wild, any plant listed on the schedule. As such, all relevant precautions should be taken when carrying out actions that could potentially spread these plants. The government has set out guidance on what can be considered 'causing to grow in the wild' within a response to the Schedule 9 review which states:

> *"We would expect that where plants listed in Schedule 9 are grown in private gardens, amenity areas etc., reasonable measures will be taken to confine them to the cultivated area so as to prevent their spreading to the wider environment and beyond the landowner's control. It is our view that any failure to do so, which in turn results in the plant spreading to the wild, could be considered as 'causing to grow in the wild' and as such would constitute an offence…Additionally, negligent or reckless behaviour such as inappropriate disposal of garden waste, where this results in Schedule 9 species becoming established in the wild would also constitute an offence."*

6.1.11 As such, it is recommended that a watching brief is maintained in relation to this species, including update checks to ensure no vegetation has become established within the application boundary itself.

6.2 Ecological Enhancements

6.2.1 The National Planning Policy Framework (NPPF) encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements within the application boundary for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local BAP.

Habitats

6.2.2 Habitat enhancements will be delivered as part of the BNG strategy, forming a separate submission. This will be informed by the following principles, according with national and local conservation priorities.

6.2.3 **New Planting.** Where practicable, new planting under the proposals should be comprised of native species of local provenance, including trees and shrubs appropriate to the local area. Suitable species for inclusion within the planting could include native trees such as Oak, Birch *Betula pendula* and Field Maple, whilst native shrub species of particular benefit would likely include fruit and nut bearing species which would provide additional food for wildlife, such as Blackthorn, Hawthorn, Crab Apple *Malus sylvestris*, Hazel *Corylus avellana*

and Elder. Where non-native species are proposed, these should include species of value to wildlife, such as varieties listed on the RHS' 'Plants for Pollinators' database, providing a nectar source for bees and other pollinating insects.

6.2.4 **Wildflower Grassland and Flowering Lawn.** Within areas of open space, wildflower grassland can be created. These should be subject to a varied management regime to provide a range of sward types. Most areas should be managed as hay meadow, subject to cutting 2-3 times a year to promote a flower rich sward, whilst areas of rough, tussocky grassland can be established along woodland and hedgerow margins. As such, grassland areas will provide a rich habitat resource for invertebrate species, in turn providing increased foraging opportunities for wildlife including birds and bats. Consideration can also be given to the laying of wildflower turfs, comprising locally appropriate native species, to establish wildflower grassland. This would ensure rapid establishment of these habitats and reduce the timeframe for delivering the range of ecological benefits that are proposed. Within parks and other recreation and amenity areas, consideration can be given to seeding of flowering lawn, containing a range of herb species which respond well to frequent mowing. This will provide a further flowering and pollen resource for invertebrates.

6.2.5 **Scrub Planting.** Scrub habitat should be established along woodland margins, hedgerows and within grassland areas creating scrub mosaics and forming valuable ecotone habitats for a range of wildlife, including reptiles, small mammals and invertebrates.

6.2.6 **Wetland Features.** The opportunity exists under the proposals to create new wetland habitats as part of the Sustainable Drainage System (SUDS). Where practical these should be designed in accordance with ecological principles, incorporating measures such as shallow, sinuous margins, areas of permanent water and planting with native vegetation. Such measures will benefit a range of wetland species including birds, aquatic invertebrates and amphibians whilst also helping to attenuate surface water run-off.

6.2.7 **Hedgerows.** New lengths of hedgerow planting can be provided along the boundaries of green space areas and around areas of built development. Existing hedgerows should also be subject to supplementary planting where necessary to fill gaps and strengthen the integrity of the hedgerow.

6.2.8 **Management and enhancement of existing woodland.** It is proposed that existing woodland areas within the application boundary are subject to long-term management to maintain and enhance their value for biodiversity, increasing the quality of the existing woodland habitat resource. This will include small-scale coppicing and thinning to maintain light levels and promote a diverse woodland structure, retention of mature trees and dead wood features, and management of any non-native or invasive species.

Fauna

6.2.9 To provide additional opportunities for fauna, it is proposed that a range of new features are incorporated within the proposed development. This should include the following features, with specific measures to be detailed as part of a faunal enhancement plan which can be secured via a suitably-worded planning condition.

6.2.10 **Bat Boxes.** Bat boxes should be incorporated within the proposed development. The provision of bat boxes will provide new roosting opportunities for bats in the area, such as Soprano Pipistrelle, a national Priority Species. So as to maximise their potential use, the bat boxes should ideally be situated on suitable retained trees, erected as high up as possible and sited in sheltered wind-free areas that are exposed to the sun for part of the day, facing a south-east, south or south-westerly direction. In addition, where architectural

design allows, a number of integrated bat boxes / roost features should be incorporated into a proportion of the new build. The precise number and locations of boxes / roost features should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

6.2.11 **Bird Boxes.** Bird nesting boxes should be incorporated within the proposed development, thereby increasing nesting opportunities for birds. This should include integrated nest boxes on new buildings targeting species including Swift and House Sparrow, whilst boxes can be erected on retained trees. The precise number and locations of boxes should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

6.2.12 **Habitat Piles and Refugia.** A proportion of any deadwood arising from vegetation clearance works should be retained in a number of wood piles located within areas of new planting, new wetland habitats or areas of wildflower grassland in order to provide potential habitat opportunities for invertebrate species, which in turn could provide a prey source for a range of other wildlife. Dedicated hibernacula and refugia can also be provided for reptile and amphibian species, comprising log or rubble piles either left open or covered in soil and turfs. Loggeries can also be provided, comprising buried logs to form dead wood habitat for invertebrates such as Stag Beetle.

6.2.13 **Bee Bricks and Insect Boxes.** It is recommended that bee bricks be incorporated within the proposed development thereby increasing nesting opportunities for declining populations of non-swarming solitary bee populations. Ideally, bee bricks should be located within suitable south-facing walls (where architectural design allows), located at least 1m off the ground. The bricks should be unobstructed by vegetation, though within close vicinity of nectar and pollen sources. Insect boxes can also be provided within the areas of wildlife habitat in order to enhance the nesting and over-wintering locations available for a range of invertebrates, particularly solitary wasps and bees.

7 Conclusions

7.1 Aspect Ecology has carried out an Ecological Appraisal of the proposed development, based on the results of a desktop study, habitat survey and a number of detailed protected species surveys.

7.2 The available information confirms that no statutory or non-statutory nature conservation designations are present within or adjacent to the survey area, and none of the designations within the surrounding area are likely to be adversely affected by the proposals. Further assessment in relation to Ashdown Forest SAC/SPA is set out in the accompanying Report to Inform a Habitats Regulations Assessment.

7.3 The habitat survey has established that the survey area is dominated by habitats not considered to be of ecological importance, whilst the proposals retain the vast majority of those features identified to be of value. Where it has not been practicable to avoid loss of habitats, new habitat creation is proposed to offset losses, in conjunction with the landscape proposals.

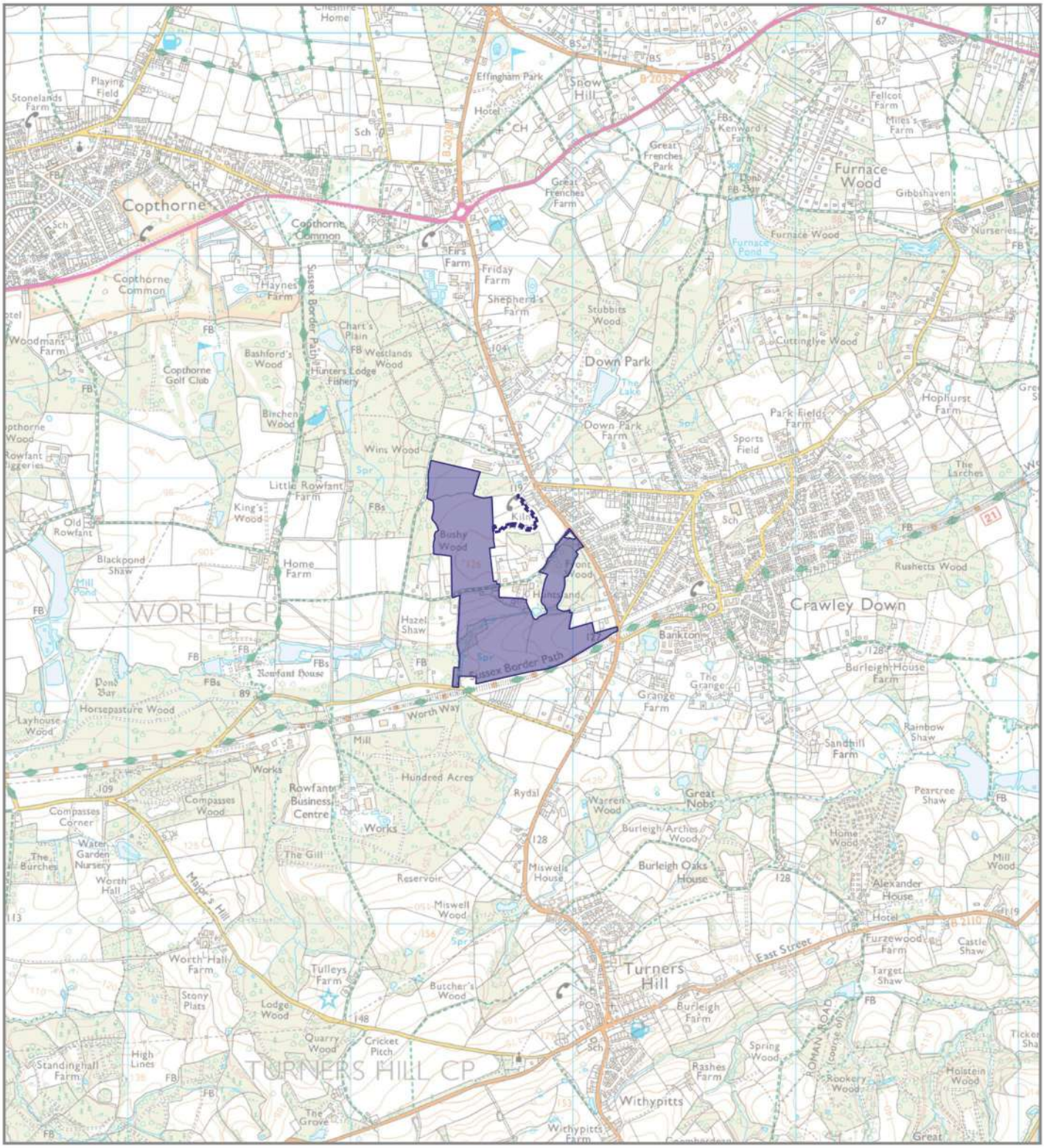
7.4 The habitats within the survey area support several protected species, including species protected under both national and European legislation. Accordingly, a number of mitigation measures have been proposed to minimise the risk of harm to protected species, with compensatory measures proposed, where appropriate, in order to maintain the conservation status of local populations.

7.5 In conclusion, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, the proposals will not result in significant harm to biodiversity.

7.6 Ecological enhancements are proposed to achieve a biodiversity net gain, to be set out further as part of the BNG strategy in a separate submission.

Plan 6482/ECO1:

Site Location



Key:

- Survey Area
- Northern Access Link Area

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Land West of Turners Hill Road, Crawley Down	PROJECT
Site Location	TITLE
6482/ECO1	DRAWING NO.
B/BG	REV
December 2024	DATE
DM/BG	QC

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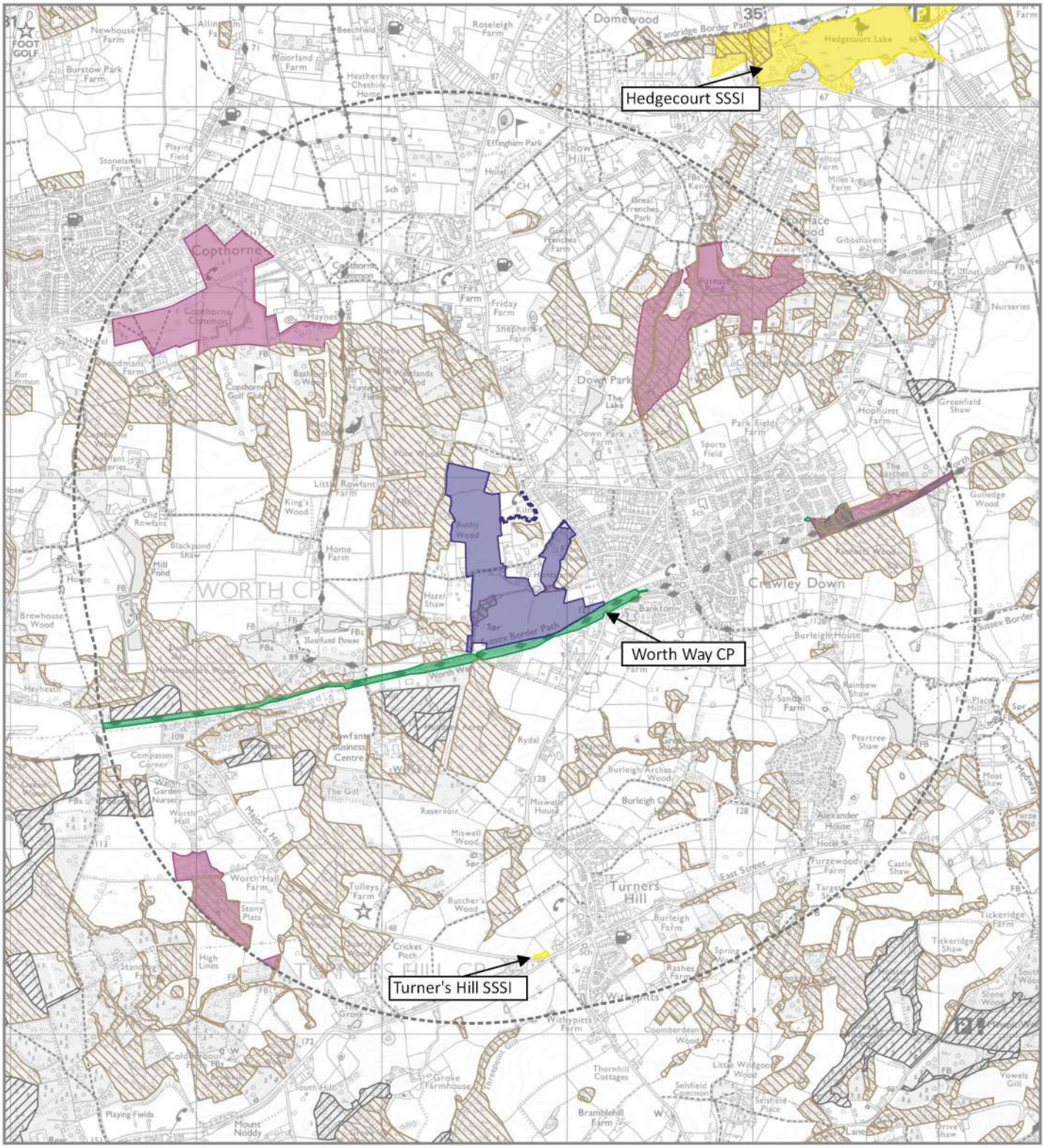
Plan 6482/ECO2:

Ecological Designations



Key:

- Survey Area
- Northern Access Link Area
- Site of Special Scientific Interest (SSSI)
- Ancient Replanted Woodland (ARW)
- Ancient Semi-natural Woodland (ASW)
- Local Wildlife Site (LWS)
- Country Park (CP)
- Local Records Centre 2km Search Area

Non-statutory data provided by Sussex Biodiversity Records Centre

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Land West of Turners Hill Road, Crawley Down	PROJECT
Ecological Designations	TITLE
6482/ECO2	DRAWING NO.
C/BG	REV
December 2024	DATE
DM/BG	QC

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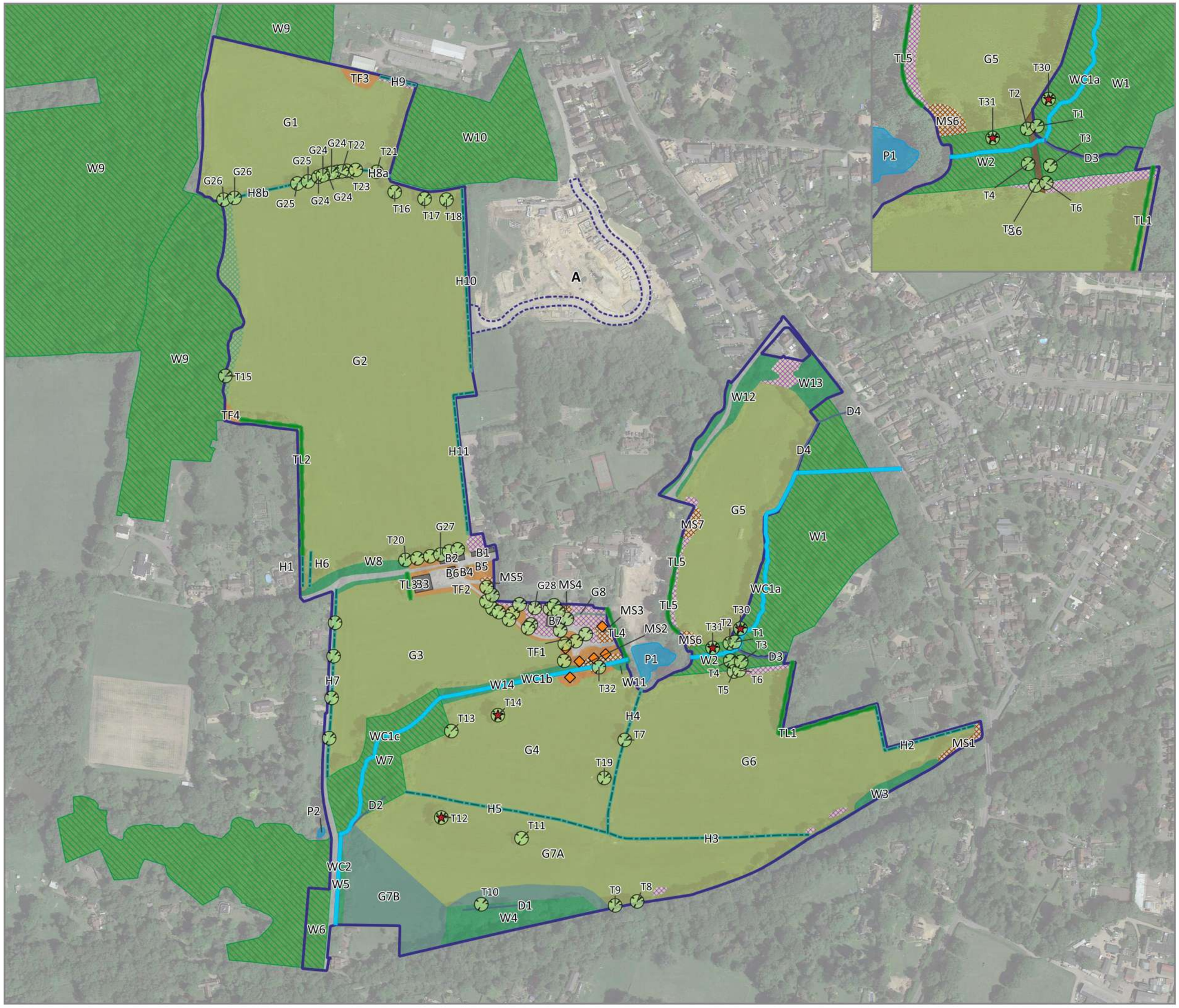
Plan 6482/ECO3:

Habitats and Ecological Features



Key:

- Survey Area
- Northern Access Link Area
- Ancient Semi-natural Woodland
- Bracken
- Bramble Scrub
- Building
- Hardstanding
- Mixed Scrub
- Modified Grassland
- Other Neutral Grassland
- Pond
- Tall Forbs
- Woodland
- Artificial Unvegetated, Unsealed Surface
- Watercourse
- Ditch
- Line of Trees
- Hedgerow
- Tree
- Veteran Tree
- Japanese Knotweed

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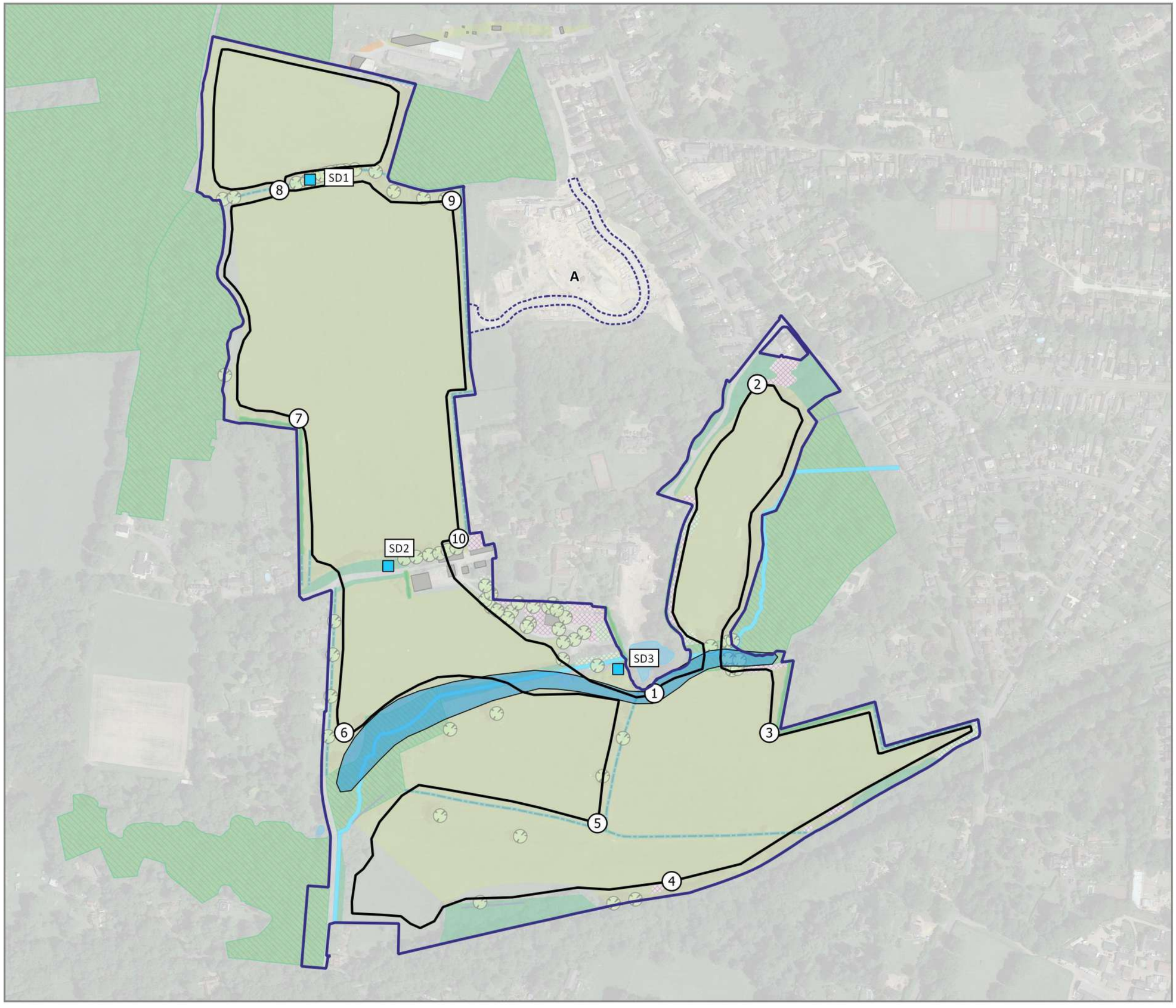
Land West of Turners Hill Road, Crawley Down

Habitats and Ecological Features

PROJECT	
TITLE	Habitats and Ecological Features
DRAWING NO.	6482/ECO3
REV	C/BG
DATE	December 2024
QC	DM/BG

Plan 6482/ECO4:

Bat Survey Transect and Static Locations



Key:

- Survey Area
- Northern Access Link Area
- Bat Activity Transect
- Bat Activity Listening Points
- Static Detector Locations
- Area of interest for survey start

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Land West of Turners Hill Road, Crawley Down — PROJECT

Bat Survey Transect and Static Locations — TITLE

6482/ECO4 — DRAWING NO.

B/BG — REV

December 2024 — DATE

DM/BG — QC

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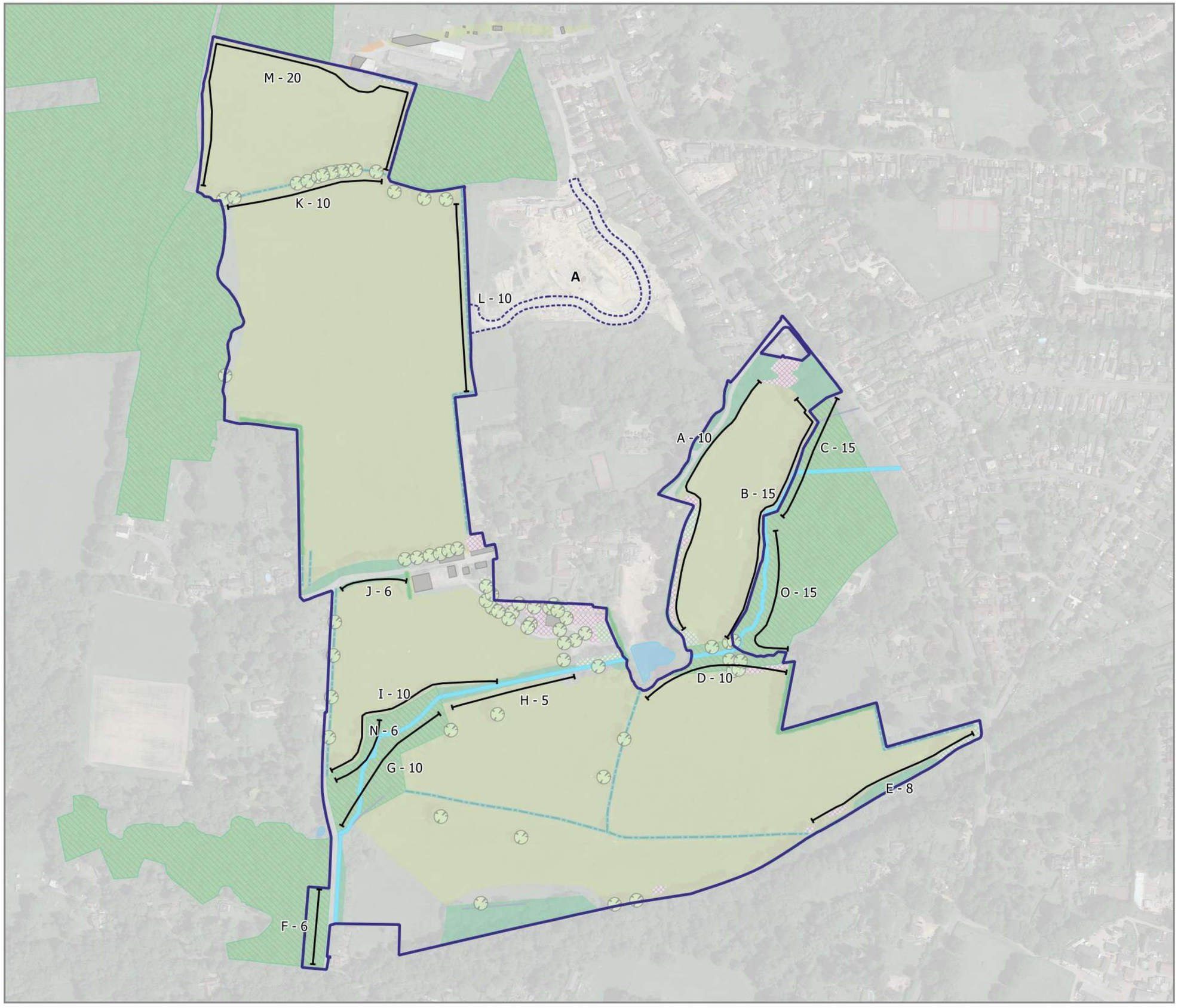
Plan 6482/ECO5:

Dormouse Survey Plan



Key:

- Survey Area
- Northern Access Link Area
- Dormouse Transect (number indicates nest tubes per transect)

aspect ecology
APEM Group

Aspect Ecology Limited - West Court - Hardwick Business Park
Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 279721 - info@aspect-ecology.com - www.aspect-ecology.com

Land West of Turners Hill Road, Crawley Down

Dormouse Survey Plan

6482/ECO5

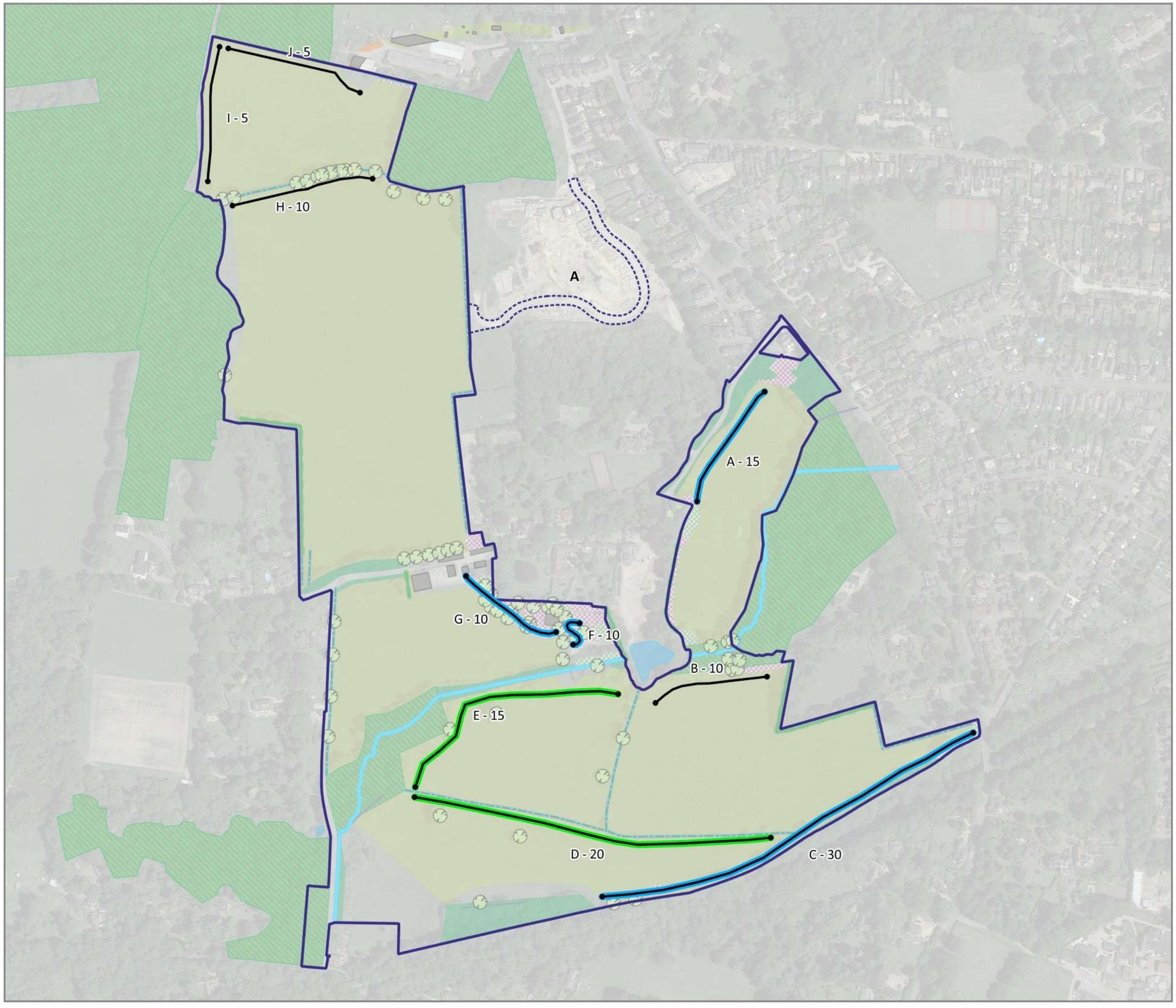
B/BG

December 2024

DM/BG

Plan 6482/ECO6:

Reptile Survey Plan



Key:

- Survey Area
- Northern Access Link Area
- Reptile Transects (number indicates refugia per transect)
- Transects recorded to support adult Grass Snake
- Transects recorded to support juvenile Grass Snake

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Land West of Turners Hill Road, Crawley Down — PROJECT

Reptile Survey Plan — TITLE

6482/ECO6 — DRAWING NO.

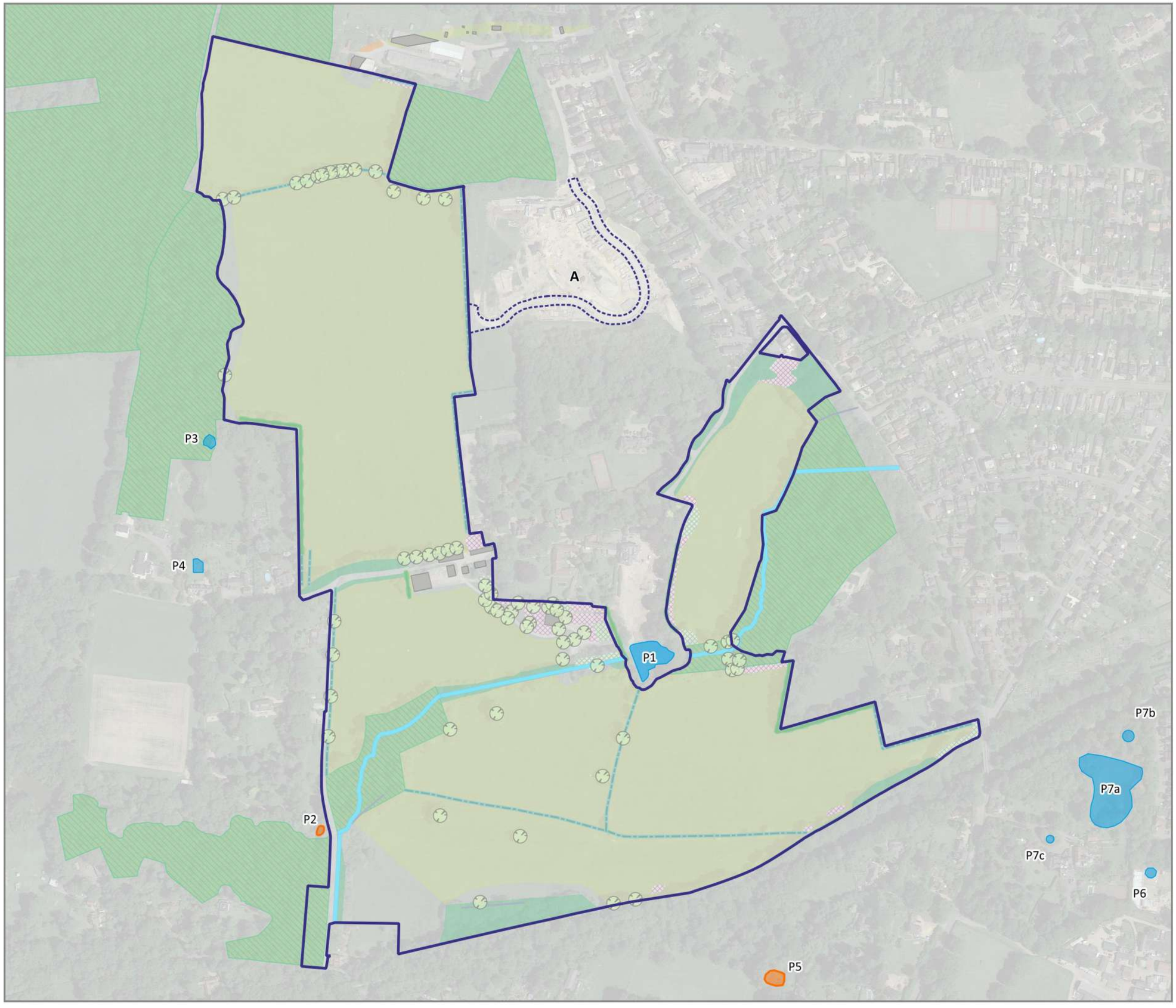
B/BG — REV

December 2024 — DATE

DM/BG — QC

Plan 6482/ECO7:

Great Crested Newt Survey Plan



Key:

- Survey Area
- Northern Access Link Area
- Pond within 250m of the survey area
- Ponds recorded to support Great Crested Newt

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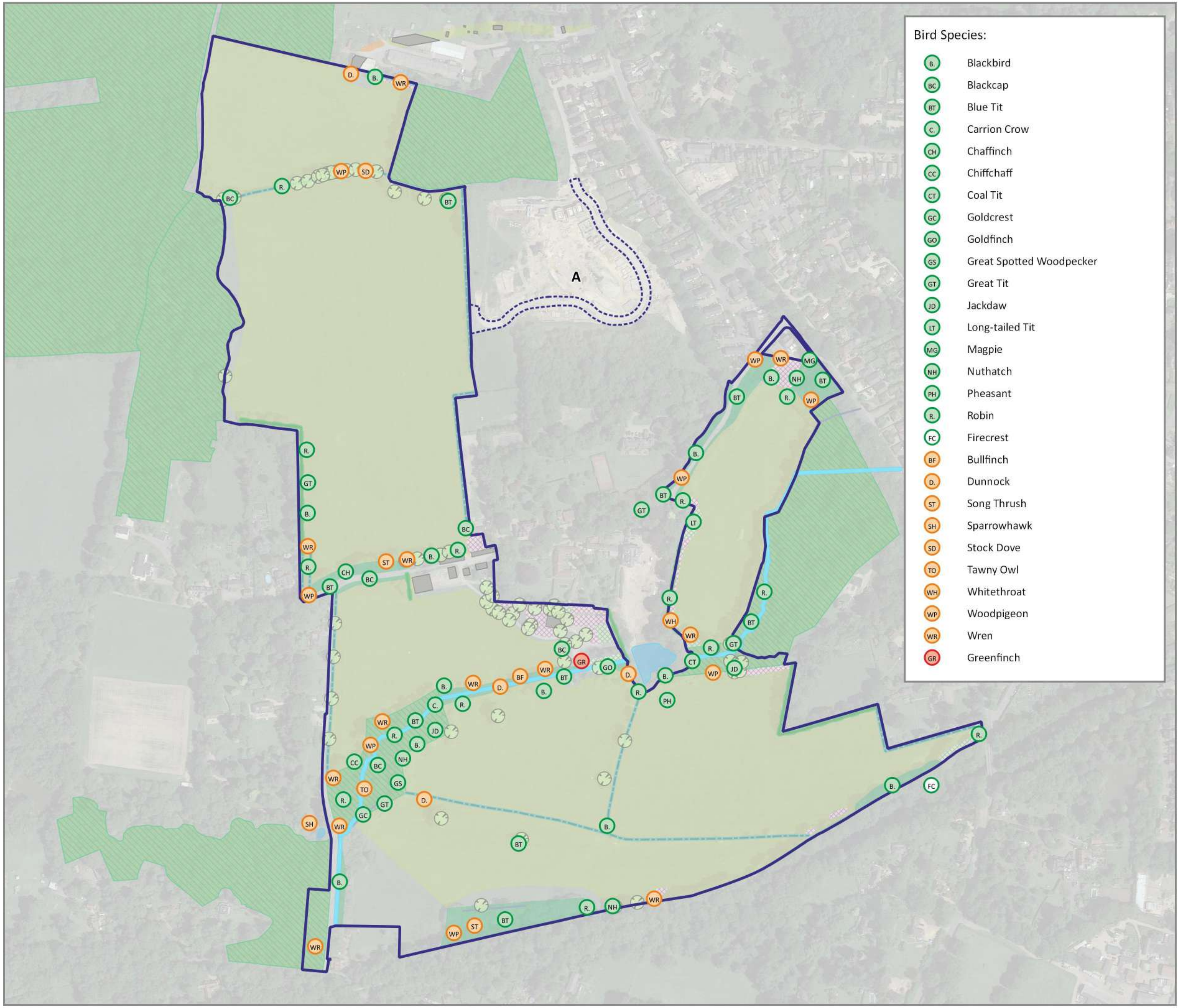
Land West of Turners Hill Road, Crawley Down

Great Crested Newt Survey Plan

PROJECT	
TITLE	
DRAWING NO.	6482/ECO7
REV	B/BG
DATE	December 2024
QC	DM/BG

Plan 6482/ECO8:

Breeding Bird Survey Plan



Key:

- Survey Area
- Northern Access Link Area
- Breeding / Probable Breeding (BOCC Red List)
- Possible Breeding (BOCC Red List)
- Breeding / Probable Breeding (BOCC Amber List Species)
- Possible Breeding (BOCC Amber List Species)
- Breeding / Probable Breeding (BOCC Green List - Not Threatened)
- Possible Breeding (BOCC Green List - Not Threatened)

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Noral Way - Banbury - Oxfordshire - OX16 2AF
01295 279721 - info@aspect-ecology.com - www.aspect-ecology.com

Land West of Turners Hill Road, Crawley Down	PROJECT
Breeding Bird Survey Results	TITLE
6482/ECO8	DRAWING NO.
A/BG	REV
December 2024	DATE
DM/BG	QC

Appendix 6482/1:

Illustrative Masterplan

- Application site
- 01 Vehicular/pedestrian and cycle access point
- 02 Sustainable drainage system including swales
- 03 Retained and enhanced vegetation
- 04 Tree belt planting
- 05 Community orchard/garden
- 06 Meadow planting and species-rich landscapes
- 07 Pedestrian connection points
- 08 Shared cycle/footpath
- 09 Community heart including gathering space/band stand area and St Leonards lookout
- 10 65 bed care home
- 11 Local Area for Play
- 12 Local Equipped Area for Play
- 13 Neighbourhood Equipped Area for Play
- 14 Countryside open space
- 15 Pumping station
- 16 Substation
- 17 Mown paths
- 18 Cycle and pedestrian connection point
- Public right of way: Footpath

N.

Not to scale

CLIENT: WATES DEVELOPMENTS

PROJECT: LAND WEST OF CRAWLEY DOWN

DRAWING: ILLUSTRATIVE MASTERPLAN NORTH 150 UNITS

PROJECT NUMBER: 1314

DRAWING NUMBER: SK001-02

REVISION: V14

DATE:15.01.2025

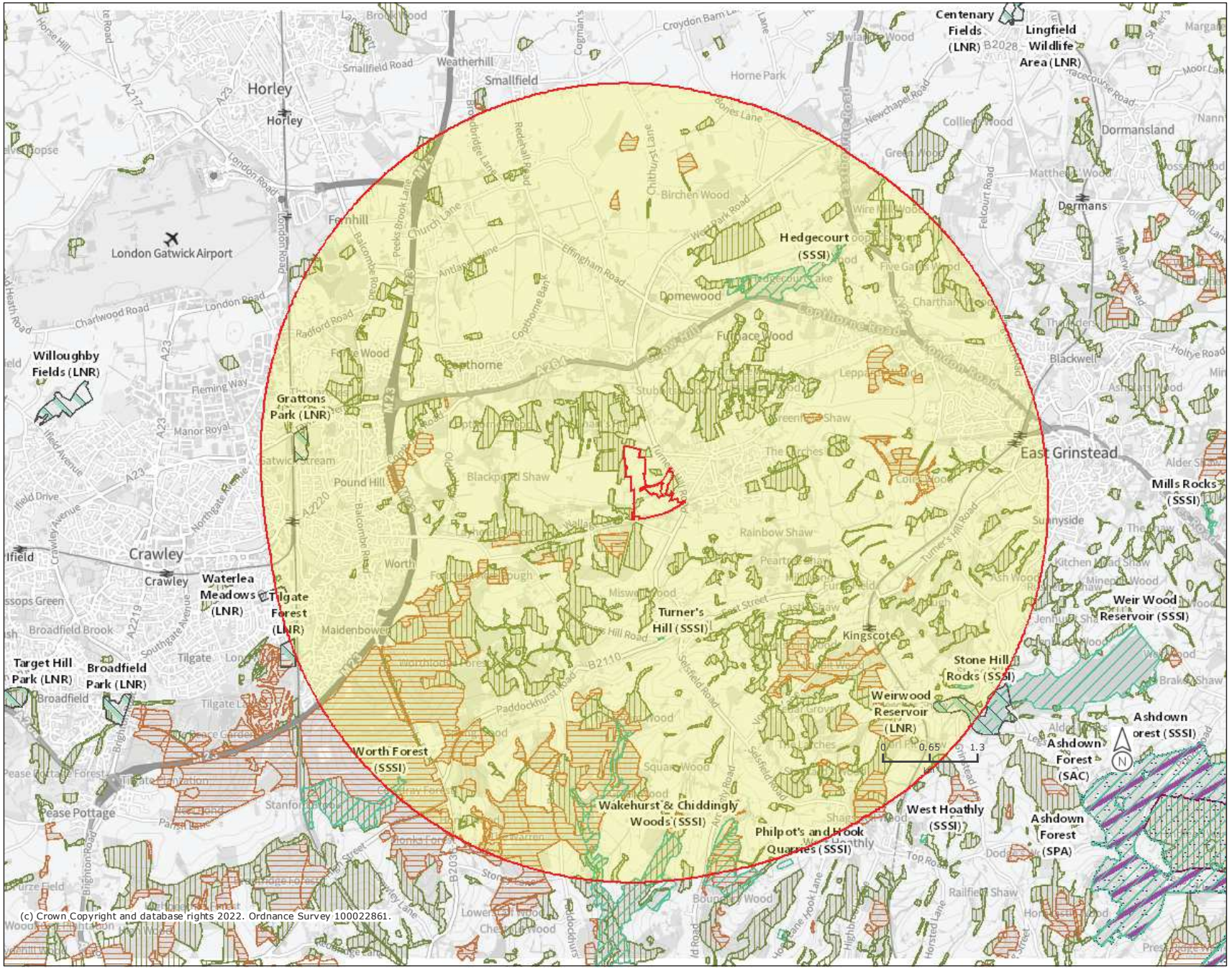
MOSAIC
Urban Design & Masterplanning

Appendix 6482/2:

Desktop Study Data

MAGiC

6482 - Crawley Down 5km Statutory Designations



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)

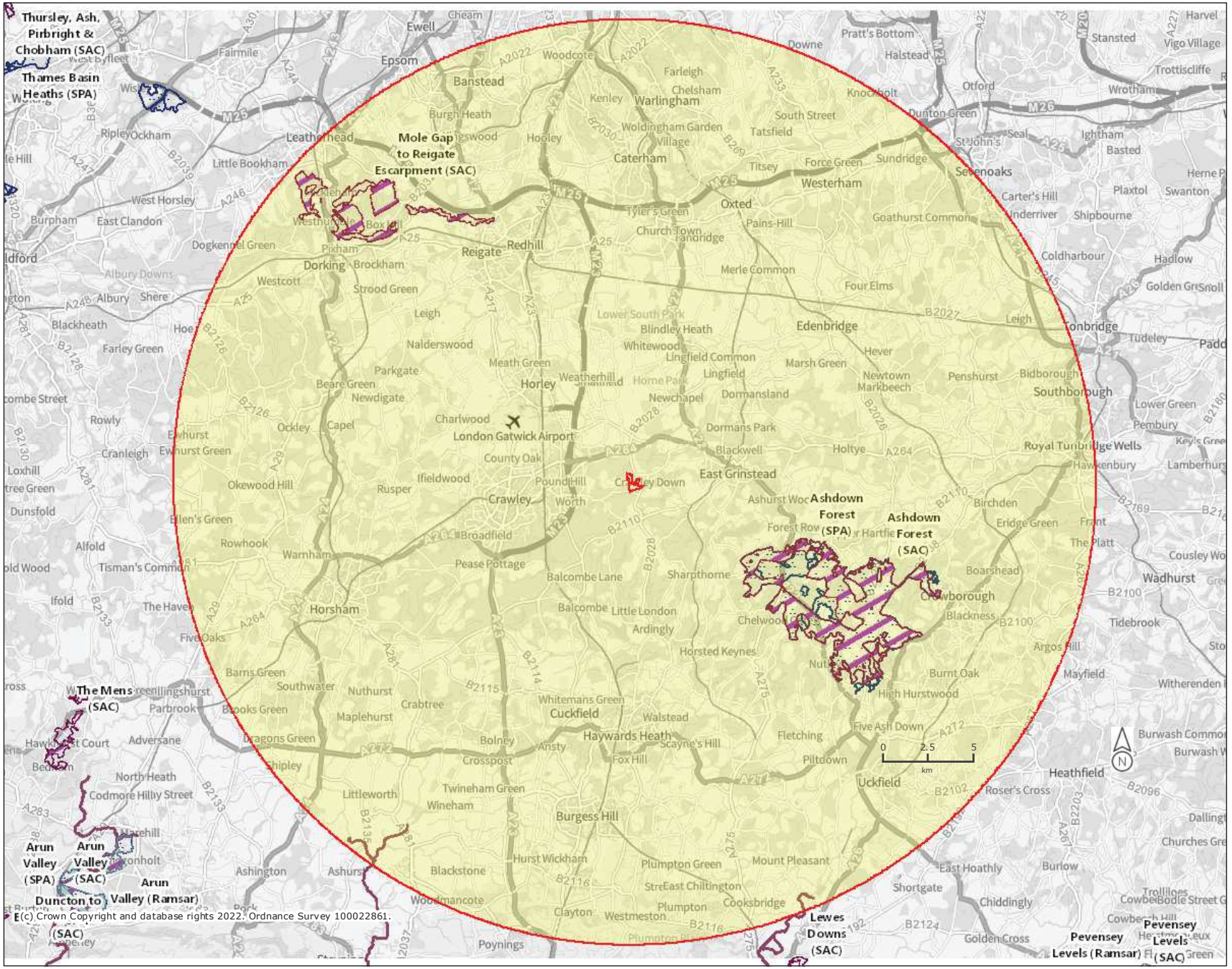
Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland

Projection = OSGB36
xmin = 519900
ymin = 131000
xmax = 546600
ymax = 144100

0 1 2
km

6482 - Crawley Down 25km International Designations



Legend

- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)

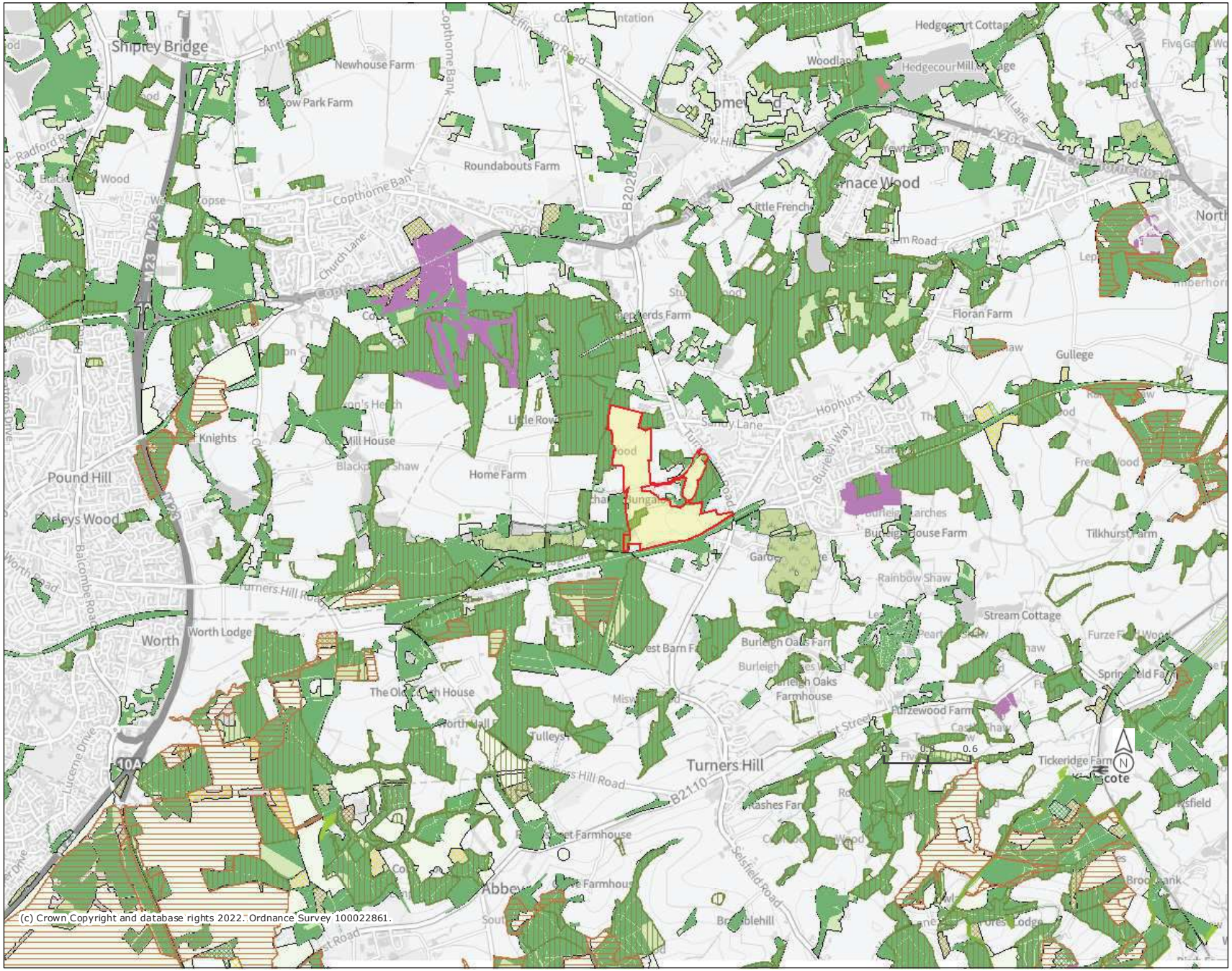
Projection = OSGB36
xmin = 479400
ymin = 111300
xmax = 586000
ymax = 163500

0 4 8 km

Map produced by MAGIC on 25 August, 2022.

MAGIC

6482 - Crawley Down Priority Habitats



Legend

- Priority Habitat Inventory - Calaminarian Grassland (England)
- Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Calcareous Grassland (England)
- Priority Habitat Inventory - Lowland Dry Acid Grassland (England)
- Priority Habitat Inventory - Lowland Meadows (England)
- Priority Habitat Inventory - Purple Moor Grass and Rush Pasture (England)
- Priority Habitat Inventory - Upland Calcareous Grassland (England)
- Priority Habitat Inventory - Upland Hay Meadows (England)
- Priority Habitat Inventory - Lowland Heathland (England)
- Priority Habitat Inventory - Mountain Heaths and Willow Scrub (England)
- Priority Habitat Inventory - Upland Heathland (England)
- Priority Habitat Inventory - Limestone Pavements (England)
- Priority Habitat Inventory - Blanket Bog (England)
- Priority Habitat Inventory - Lowland Fens (England)
- Priority Habitat Inventory - Lowland Raised Bog (England)
- Priority Habitat Inventory - Reedbeds (England)
- Priority Habitat Inventory - Upland Flushes, Fens and Swamps (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Forestry Commission Legal Boundary (England)

Projection = OSGB36
xmin = 526700
ymin = 134300
xmax = 540100
ymax = 140800

0 0.5 1 km

Appendix 6482/3:

Details of Automated Static Detector Surveys

Automated detector survey details.

Survey Date	Weather Conditions			
	Wind (BF)	Temp(c)	Cloud Cover (%)	Precipitation (mm)
01/08/2022	2	17 - 20	31 - 49	0
02/08/2022	2 - 3	17 -18	25 - 33	0
03/08/2022	2 - 3	16 - 19	1 – 3	0
04/08/2022	3 - 4	14 - 20	10 – 30	0
05/08/2022	2	11 - 16	11 - 21	0
06/08/2022	1 - 2	11 - 15	7 - 8	0
07/08/2022	1 - 2	13 - 17	2 - 14	0
26/09/2022	3	7 – 9	45 – 69	0
27/09/2022	3	7 – 10	25 – 57	0
28/09/2022	3	7 – 9	60 - 100	0
29/09/2022	2	7 - 9	7 - 11	0
30/09/2022	3 - 5	11 - 15	81 - 100	0.0 – 6.6
01/10/2022	2 - 4	13	9 - 79	0.0 – 0.1
02/10/2022	1 - 2	12	10 -100	0
17/10/2022	1 - 2	10 - 15	16 – 100	0
18/10/2022	3 - 4	12 -13	12 - 54	0
19/10/2022	3 - 4	14 - 15	71 - 100	0.0 – 2.0
20/10/2022	3	13 - 14	10 - 84	0
22/10/2022	2 - 4	14	11 – 100	0.0 – 2.3
23/10/2022	4 - 5	13 - 16	70 – 100	0.0 – 1.0
24/10/2022	2 - 4	11 - 14	26 - 85	0
25/10/2022	3 - 4	13 - 15	40 - 100	0.0 – 0.1
11/04/2023	3 - 5	5 – 9	0 - 100	0.0 – 3.7
13/04/2023	1 - 2	3 – 6	21 – 100	0
15/04/2023	1 - 2	6 - 7	8 – 100	0
16/04/2023	1 - 2	5 - 7	0 – 100	0
17/04/2023	3	4 - 6	3 – 47	0
10/05/2023	2 – 3	7 – 10	38 - 70	0
11/05/2023	1 - 2	8 – 10	49 – 84	0.0 – 0.1
12/05/2023	4	7 - 10	47 - 84	0
13/05/2023	3	7 – 10	0 - 3	0
14/05/2023	2 - 3	10 - 11	24 – 100	0.0 – 0.3
15/05/2023	2	5 – 9	3 - 78	0
16/05/2023	2	4 – 10	20 – 100	0
12/06/2023	2 - 3	13 - 18	2 - 16	0
13/06/2023	2 – 3	12 - 17	11 - 15	0
14/06/2023	2	12 – 16	9 – 100	0
15/06/2023	2	12 - 16	4 - 6	0
16/06/2023	2	12 - 16	2 - 11	0
17/06/2023	1 - 2	16 – 18	17 - 33	0
18/06/2023	2 - 3	13 - 16	100	0.0 – 0.8
03/07/2023	3 - 4	12 - 14	19 - 79	0
04/07/2023	3	10 - 13	73 - 84	0.2 – 1.4
05/07/2023	2 - 3	11 – 15	4 - 47	0
06/07/2023	1	11 - 14	8 - 29	0
07/07/2023	2 - 3	18 - 22	10 - 89	0
08/07/2023	2	14 - 19	25 - 42	0
09/07/2023	2	12 – 16	5 – 18	0

BF0 = calm, BF12 = hurricane force

Appendix 6482/4:

Principles of Ecological Evaluation

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*', Version 1.3, Chartered Institute of Ecology and Environmental Management, Winchester (updated September 2024)

- 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.

<u>Assigning Level of Importance</u>

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 6482/5:

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 itself[1]. 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 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.

Appendix 6482/6:

Habitat Survey Results: Grasslands and Hedgerows

Habitat Survey Results: Grasslands

Area	Management	Cover of Rye-grass and White Clover	Herb content	Herb content excluding sub-optimal species	Sward description	Sward height - 20% less than 7cm and 20% more than 7cm	Bare ground cover	Bracken cover	Scrub cover	Cover of sub-optimal species	Physical damage	Invasive Schedule 9 plant species	Other features/comments	Are grasses other than Rye-grass, Timothy, Cock's-foot and Meadow Fescue at least abundant within sward	Average species per m^2	Date of survey	Grassland habitat type
F1	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	<10%	10-20%	10-20%	Uniform sward length, generally around 20-30cm in length.	No	<1%	<1%	<1%	<5%	<5%	None evident	Large patches of Soft Rush and occasional Lesser Spearwort indicating damp conditions.	Yes (Yorkshire Fog, Common Bent)	6.2	27/09/2022, 01/08/2024	Modified grassland
F2	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	<10%	<10%	<10%	Uniform sward length, generally around 20-30cm in length.	No	<1%	<1%	<1%	<5%	<5%	None evident	None	Yes (Yorkshire Fog, Common Bent)	5.5	27/09/2022, 01/08/2024	Modified grassland
F3	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	10-30%	<10%	<10%	Uniform sward length, generally maintained at around 5-10cm height although dependent on time since grazing/cutting.	No	<1%	<1%	<1%	<5%	<5%	None evident	None	No	6.4	27/09/2022, 01/08/2024	Modified grassland
F4	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	10-30%	10-20%	10-20%	Uniform sward length, generally maintained at around 5-10cm height although dependent on time since grazing/cutting.	No	<1%	<1%	<1%	<5%	<5%	None evident	None	Yes (Yorkshire Fog, Common Bent)	7	27/09/2022, 18/10/2024	Modified grassland
F5	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	10-30%	10-20%	15%	Uniform sward length, generally maintained at around 5-10cm height although dependent on time since grazing/cutting. Tussocky at margins where uncut.	No	<1%	<1%	<1%	5%+ (Creeping Buttercup)	<5%	None evident	Frequent Soft Rush and occasional Lesser Spearwort, indicating damp conditions	Yes	7.8	27/09/2022, 01/08/2024	Modified grassland
F6	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	30%+	20-30%	<10%	Uniform sward length, generally maintained at around 5-10cm height although dependent on time since grazing/cutting.	No	<1%	<1%	<1%	5%+ (Creeping Buttercup and White Clover)	<5%	None evident	None	Yes (Yorkshire Fog, Common Bent)	6.8	27/09/2022, 18/10/2024	Modified grassland
F7a	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	10-30%	10-20%	10-20%	Uniform sward length, generally maintained at around 5-10cm height although dependent on time since grazing/cutting.	No	<1%	<1%	<1%	<5%	<5%	None evident	None	Yes (Yorkshire Fog, Common Bent)	6.4	27/09/2022, 01/08/2024	Modified grassland
F7b	Fields are grazed on rotation by sheep/cattle, with occasional cutting as required.	<10%	20-30%	20-30%	Very rush dominated with 50cm sward height. Not tussocky.	No	<1%	<1%	<1%	<5%	<5%	None evident	Rush dominated with clearly poor drainage but not waterlogged	Yes	5.7	27/09/2022, 18/10/2024	Other neutral grassland
F8	Occasional management by cutting.	<10%	20-30%	<10%	Rough, tussocky grassland cut to 10-15cm height.	No	1-5% (some rutting from vehicles)	<1%	<1%	>5%	>5% (some rutting from vehicles)	Japanese Knotweed	Mostly Common Nettle, Creeping Buttercup, Docks, some rushes and Common Ragwort	Yes (Common Bent)	Est. 6-8	18/10/2024	Other neutral grassland

Grey shaded columns indicate criteria for medium and above distinctiveness grasslands, with cells shaded in green indicating qualifying criteria

Habitat Survey Results: Grasslands (Quadrats)

Common Name	Latin Name	Indicator Species	F1							F2												F3							F4							F5							F6								F7A							F7B				
			1	2	3	4	5	P	Freq	1	2	3	4	5	6	7	8	9	10	P	Freq	1	2	3	4	5	P	Freq	1	2	3	4	5	P	Freq	1	2	3	4	5	P	Freq	1	2	3	4	5	6	P	Freq	1	2	3	4	5	P	Freq	1	2	3	P	Freq
Bramble	*Rubus fruticosus agg.*		x						R																																																					
Broad-leaved Dock	*Rumex obtusifolius*	U				x			R														x	x	x			F																																	
Cock's-foot	*Dactylis glomerata*		x						R				x	x							R																						x			x	x	x		F		x	x				O					
Common Bent	*Agrostis capillaris*		x	x	x	x	x		F	x	x	x	x	x	x	x	x	x	x		F	x	x	x		x		F	x	x	x	x	x		F	x	x	x	x	x		F	x	x	x	x	x			F	x	x	x	x	x		F	x	x	x		P
Common Bird's-foot Trefoil	*Lotus corniculatus*	C A LM	x	x	x				F		x	x									R	x						R								x	x		x	x		O	x							R	x	x		x	x		F					
Common Mallow	*Malva sylvestris*		x						R																																																					
Common Mouse-ear	*Cerastium fontanum*										x		x	x	x	x	x	x			F													P	P		x	x		x		O			x					R												
Common Nettle	*Urtica dioica*	U	x						R																																																					
Common Ragwort	*Senecio jacobaea*							P	P																																																					
Common Sorrel	*Rumex acetosa subsp. acetosa*	SI								x				x				x			O	x				x		O								x	x	x		x		O				x		x		O				x			R					
Crane's-bill sp.	*Geranium sp.*																																													x	x	x		F												
Creeping Bent	*Agrostis stolonifera*						x		R																				x						R																											
Creeping Buttercup	*Ranunculus repens*	U	x		x	x	x		F	x		x	x			x					O	x				x		O	x	x	x	x			F		x	x	x	x		O	x	x		x				F	x			x	x		F				P	P
Creeping Cinquefoil	*Potentilla reptans*																																																					x			R					
Creeping Thistle	*Cirsium arvense*	U	x			x			O										x		R								x						R																											
Cuckooflower	*Cardamine pratensis*	SI																																																											P	P
Daisy	*Bellis perennis*																					x						R																																		
Dandelion	*Taraxacum officinale agg.*													x							R																									x				R			x				R					
Dock sp.	*Rumex sp.*			x					R																																																					
Greater Bird's-foot Trefoil	*Lotus pedunculatus*	LM				x	x		O						x	x			x		O								x	x	x				F																								x	x		P
Jointed Rush	*Juncus articulatus*																																																									x	x	x		P
Lesser Spearwort	*Ranunculus flammula*							P	P																																P	P																					
Lesser Stitchwort	*Stellaria graminea*			x					R						x				x		R															x						R																			P	P
Marsh Thistle	*Cirsium palustre*							P	P																		P	P																																			
Meadow Vetchling	*Lathyrus pratensis*	LM																		P	P																																									
Perennial Rye-grass	*Lolium perenne*			x					R	x	x	x		x		x					F	x	x	x	x	x		F	x	x	x	x	x		F	x	x	x	x	x		F	x	x	x	x	x	x		F	x		x		x		F	x	x			P
Red Fescue	*Festuca rubra*																					x	x		x	x		F	x	x	x		x		F	x	x	x	x	x		F	x	x		x	x			F	x	x	x	x	x		F					
Self-heal	*Prunella vulgaris*	SI																				x						R																																		
Smooth Hawk's-beard	*Crepis capillaris*																					x						R																		x				R			x				R					
Soft Brome	*Bromus hordeaceus*																									x		R																																		
Soft Rush	*Juncus effusus*					x			R																																P	P													x		R	x	x	x		P
Speedwell sp.	*Veronica sp.*																						x					R																																		
Sweet Vernal Grass	*Anthoxanthum odoratum*																x				R								x	x	x		x		F		x					R																					
Timothy	*Phleum pratense*																							x	x			O																																		
Trailing Tormentil	*Potentilla anglica*																																																									x				P
White Clover	*Trifolium repens*	U								x		x			x	x	x				F				x			R	x	x	x				F			x		x		R		x	x	x	x	x		F	x						R					
Yorkshire Fog	*Holcus lanatus*		x	x	x	x	x		F	x	x	x	x		x	x	x	x	x		F	x	x	x				F	x	x	x	x	x		F	x	x	x	x	x		F	x	x	x		x	x		F	x	x		x	x		F	x	x	x		P
Additional unidentified grasses																																																														
Total species			**9**	**6**	**4**	**7**	**5**		**19**	**6**	**5**	**6**	**5**	**6**	**6**	**7**	**5**	**4**	**5**		**15**	**10**	**6**	**5**	**5**	**6**		**16**	**10**	**8**	**8**	**4**	**5**		**11**	**7**	**9**	**8**	**6**	**9**		**13**	**7**	**6**	**5**	**10**	**7**	**6**		**13**	**7**	**5**	**6**	**7**	**7**		**13**	**6**	**6**	**5**		**10**
Frequent									4												5							5							8							4								8							6					0
Occasional									2												3							3							0							4								1							1					0
Rare									10												6							7							2							3								4							6					0
Present									3												1							1							1							2								0							0					10
Average species per m2									**6.2**												**5.5**							**6.4**							**7**							**7.8**								**6.8**							**6.4**					**5.7**

Key

P: Present - occurring within habitat area outside of quadrats
F: Frequent - occurring in at least 5 out of 10 quadrats (or at least 3 out of 5 quadrats)
O: Occasional - occuring in 3 or 4 out of 10 quadrats (or 2 out of 5 quadrats)
R: Rare - occurring in 1 or 2 out of 10 quadrats (or 1 out of 5 quadrats)

Indicator Species: Indicator species set out under UK Habitat Classification Version 2.0 (2023) for lowland dry acid (A), lowland calcareous (C) and lowland meadow (LM) grassland; Farm Environment Plan Manual (Natural England, 2010) for semi-improved (SI) grassland; and undesirable/sub-optimal species under Statutory Biodiversity Metric Guidance

Habitat Survey Results: Hedgerows

Hedgerow number	Hedgerow type	Associated with bank/ditch	Height (more than 1.5m*)	Width (more than 1.5m*)	Woody species (species listed under Schedule 3 of the Hedgerows Regulations 1997 underlined)	Average woody species per 30m (as listed under Schedule 3 of the Hedgerows Regulations 1997)	Percentage of native species**	Ground flora and climbers (species listed under Schedule 2 of the Hedgerows Regulations 1997 underlined)	Standard trees - number, age class of trees present (young/mature/veteran/ancient), species, notable specimens	Other associated features (footpath, parallel hedge)	Other comments	Gap at hedgerow base less than 0.5m for >90% of length*	Less than 10% gaps and no canopy gaps more than 5m*	More than 1m width of undisturbed ground present for more than 90% of length*	Nettles, Cleavers and Docks dominate less than 20% cover of area of undisturbed ground*	More than 90% of hedgerow and undisturbed ground free of invasive non-native plants*	More than 90% of hedgerow and undisturbed ground free of damage*	Hedgerow with trees only - more than one age class of trees present and at least one mature/ancient/veteran tree per 50m*	Hedgerow with trees only - at least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife)*	Likely to qualify as important hedgerow under the wildlife and landscape criteria of the Hedgerows Regulations 1997	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide**	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark**	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice**	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.**	Habitat condition
H1	Native hedgerow	None	5m	2m	Hawthorn, Elder, Holly	3	More than 80%	Grasses, Common Nettle	None	None		Pass	Fail	Pass	Fail	Pass	Pass	N/A	N/A	No					Good
H2	Non-native and ornamental hedgerow	None	2m	1.5m	Beech, Cypress	1	Less than 80%	Grasses, Foxglove, Red Dead-nettle, Common Nettle, Ivy	None	None		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No					Poor
H3	Species-rich native hedgerow	None	3m	1.5m	hawthorn, guelder rose, dog rose, hazel, spindle, field maple, oak,	5	More than 80%	Grasses	young willows at Eastern end		planted - tree guards evident	Pass	Pass	Pass	Pass	Pass	Pass	N/A	N/A	No (recently planted)					Good
H4	Species-rich native hedgerow	None	3m	1.5m	hawthorn, guelder rose, dog rose, hazel, spindle, field maple, oak,	5	More than 80%	grasses, bramble margin with some thistles and nettles c 1m wide on West side	4 young multistem ash at Northern end, young oak and hawthorn to South, no brp		planted - tree guards evident	Pass	Pass	Pass	Fail	Pass	Pass	N/A	N/A	No (recently planted)					Good
H5	Species-rich native hedgerow	None	3m	1.5m	hawthorn, guelder rose, dog rose, hazel, spindle, field maple, oak,	5	More than 80%	Grasses	none		planted - tree guards evident	Pass	Pass	Pass	Pass	Pass	Pass	N/A	N/A	No (recently planted)					Good
H6	Native hedgerow	None	5m	1.5m	Hawthorn, Sycamore	1	More than 80%	Grasses	None	None		Fail	Pass	Pass	Fail	Pass	Pass	N/A	N/A	No					Good
H7	Native hedgerow	Bank	3-4m	3m	Blackthorn, ash, hazel, oak, rose, hawthorn, some elder and sycamore	4-5	More than 80%	grassland at base, bramble, honeysuckle	4 semi mature oaks present, FAR, no obvious features but some minor dead limbs etc		appears subject to routine cutting	Pass	Pass	Pass	Fail	Pass	Pass	N/A	N/A	No					Good
H8A	Native hedgerow with trees	Ditch	5-6m	3m	Hawthorn, Ash, Willow, Birch	4	More than 80%	Mostly grasses	Semi-mature Ash trees present			Fail	Fail	Pass	Pass	Pass	Pass	Pass	Fail	No					Moderate
H8B	Native hedgerow	Ditch	5-6m	3m	Hawthorn, Ash, Willow, Birch	4	More than 80%	Mostly grasses	Some young Willow			Pass	Pass	Pass	Pass	Pass	Pass	N/A	N/A	No					Good
H9	Native hedgerow	None	8m	4m	Birch, Willow	2	More than 80%	Grasses and ruderals	None	None	Unmanaged, outgrown hedgerow	Pass	Pass	Pass	Fail	Pass	Pass	N/A	N/A	No					Good
H10	Native hedgerow	None	6-8m	1.5m	Hawthorn, Blackthorn	2	More than 80%	Grasses and ruderals	None		Relatively outgrown, shrubby hedgerow	Pass	Pass	Pass	Fail	Pass	Pass	N/A	N/A	No					Good
H11	Native hedgerow	None	4m	1.5m	Hawthorn, Field Maple, Rose	2	More than 80%	Grasses and ruderals	None		Recently planted	Pass	Pass	Pass	Pass	Pass	Pass	N/A	N/A	No					Good
TL1	Line of trees	None	15m	2m	oak, holly, ash,	4-5	More than 70%	Grasses	Semi-mature to mature trees present	None										No	Pass	Fail	Pass	Pass	Moderate
TL2	Line of trees	None	15m	5m	Oak (dominant), conifers, Beech, Hawthorn, Elder, Holly	3	More than 70%	Grasses, Common Nettle	Semi-mature to mature trees present	None										No	Pass	Pass	Pass	Pass	Good
TL3	Line of trees	None	8-10m	4m	Willow, Elder	1	More than 70%	Common Nettle	Young trees	None	Situated on slight raised bank									No	Pass	Fail	Fail	Pass	Moderate
TL4	Line of trees	None	15m	5m	Pine, Oak, Beech	3	Less than 70%	Mostly bare at base	Mature Pines present	None										No	Pass	Pass	Pass	Pass	Moderate
TL5	Line of trees	None	15m	3m	Beech, Silver Birch, Willow, Ash	4	Less than 70%	Grasses	Mostly semi-mature trees	None										No	Fail	Fail	Pass	Pass	Poor

* Indicates hedgerow habitat condition assessment criteria
** Indicates line of trees habitat condition assessment criteria

Appendix 6482/7:

Habitat Condition Assessment Matrix for Statutory Biodiversity Metric

HABITAT CONDITION ASSESSMENT MATRIX FOR STATUTORY BIODIVERSITY METRIC

	Habitat type/criteria	Feature Reference											
	Grassland (low distinctiveness)	G1	G2	G3	G4	G5	G6	G7A	G9				
A	There are 6-8 vascular plant species per m^2 present, including at least 2 forbs (these may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m^2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	Pass	Fail	Pass	Pass	Pass	Pass	Pass	Pass				
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail				
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble Rubus fruticosus agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass				
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass				
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail				
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass				
G	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4).	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass				
	Condition (6+ criteria including A = good; 4-5 criteria including A = moderate; 3 criteria or fewer or fails A = poor)	Moderate	Poor	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate				

	Grassland (medium distinctiveness and above)	G7B	G8										
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description).[1] **Note - this criterion is essential for achieving Moderate or Good condition for non acid grassland types only.**	Fail	Fail										
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	Fail	Fail										
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens[2] .	Fail	Pass										
D	Cover of bracken *Pteridium aquilinum* is less than 20% and cover of scrub (including bramble *Rubus fruticosus* agg.) is less than 5%.	Pass	Pass										
E	Combined cover of species indicative of suboptimal condition[3] and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species[4] (as listed on Schedule 9 of WCA5) are present, this criterion is automatically failed.	Pass	Fail										
F	There are 10 or more vascular plant species per m2 present, including forbs that are characteristic of the habitat type (species referenced in Footnote 3 and 5 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only	Fail	Fail										
	Condition (Acid grassland: 5 criteria = good; 3-4 criteria = moderate; 2 criteria or fewer = poor. Non-acid grassland: 5+ criteria including A and F = good; 3-5 criteria including A = moderate; 2 criteria or fewer or fails A)	Poor	Poor										

Scrub		MS1	MS2	MS3	MS4	MS5	MS6	MS7					
A	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).[1] - At least 80% of scrub is native, - There are at least three native woody species[2] , - No single species comprises more than 75% of the cover (except hazel Corylus avellana , common juniper Juniperus communis , sea buckthorn Hippophae rhamnoides (only in its restricted native range), or box Buxus sempervirens , which can be up to 100% cover).	Fail	Fail	Fail	Fail	Fail	Pass	Pass					
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[3]) shrubs are all present.	Fail	Fail	Fail	Fail	Fail	Fail	Fail					
C	There is an absence of invasive non-native plant species[4] (as listed on Schedule 9 of WCA5) and species indicative of suboptimal condition[6] make up less than 5% of ground cover.	Pass	Fail	Fail	Pass	Pass	Pass	Pass					
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Fail	Fail	Fail	Fail	Pass	Fail	Fail					
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Fail	Fail	Pass	Fail	Fail	Fail	Fail					
Condition (5 criteria = good; 3-4 criteria = moderate; 2 or less criteria = poor)		**Poor**	**Poor**	**Poor**	**Poor**	**Poor**	**Poor**	**Poor**					

Woodland (assign scores of 3/2/1 accordingly)		W1	W2	W3	W4	W5	W6	W7	W8	W11	W12	W13	W14
A	Three age-classes present/ Two age-classes present/ One age-class present.	3	3	3	1	2	3	2	3	2	2	3	2
B	No significant browsing damage evident in woodland/ Evidence of significant browsing pressure is present in less than 40% of whole woodland/ Evidence of significant browsing pressure is present in 40% or more of whole woodland.	3	3	2	2	2	2	2	3	2	3	2	3
C	No invasive species present in woodland/ Rhododendron Rhododendron ponticum or cherry laurel Prunus laurocerasus not present, and other invasive species <10% cover/ Rhododendron or cherry laurel present, or other invasive species ≥10% cover.	1	1	3	3	3	1	3	2	1	1	1	2
D	Five or more native tree or shrub species found across woodland parcel/ Three to four native tree or shrub species found across woodland parcel/ Two or less native tree or shrub species across woodland parcel.	2	2	2	1	2	2	3	2	1	2	2	2
E	>80% of canopy trees and >80% of understory shrubs are native/ 50 - 80% of canopy trees and 50 - 80% of understory shrubs are native/ <50% of canopy trees and <50% of understory shrubs are native.	3	3	3	3	3	3	3	3	3	2	3	3
F	10 - 20% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted/ 21 - 40% of woodland has areas of temporary open space/ <10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space, please see Good category.	3	3	3	3	3	3	3	2	3	3	3	3
G	All three classes present in woodland; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth/ One or two classes only present in woodland/ No classes or coppice regrowth present in woodland.	2	2	3	2	3	3	3	2	2	2	2	2
H	Tree mortality 10% or less, no pests or diseases and no crown dieback/ 11% to 25% tree mortality and or crown dieback or low-risk pest or disease present/ Greater than 25% tree mortality and or any high-risk pest or disease present.	3	3	3	3	3	3	3	2	3	3	3	2
I	Recognisable NVC plant community at ground layer present, strongly characterised by ancient woodland flora specialists/ Recognisable woodland NVC plant community at ground layer present/ No recognisable woodland NVC plant community10 at ground layer present.	3	2	2	1	2	2	3	2	1	1	2	1
J	Three or more storeys across all survey plots, or a complex woodland/ Two storeys across all survey plots/ One or less storey across all survey plots/ One or less storey across all survey plots.	3	2	2	1	2	2	2	3	1	2	2	1
K	Two or more veteran trees per hectare/ One veteran tree per hectare/ No veteran trees present in woodland.	3	3	2	1	2	2	2	1	1	1	1	1
L	50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities/ Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities/ Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities.	2	2	2	2	2	2	3	2	1	1	2	1
M	No nutrient enrichment or damaged ground evident/Less than 1 hectare in total of nutrient enrichment across woodland area, and or less than 20% of woodland area has damaged ground/ 1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground.	3	3	3	2	3	3	3	2	1	3	3	1
Condition (total score of 33-39 = good; total score of 26-32 = moderate; total score of 13-25 = poor)		**Good**	**Moderate**	**Good**	**Poor**	**Moderate**	**Moderate**	**Good**	**Moderate**	**Poor**	**Moderate**	**Moderate**	**Poor**

Urban		TF1	TF2	TF3	TF4									
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	Fail	Fail	Fail	Fail									
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	Pass	Pass	Pass	Fail									
C	Invasive non-native plant species (listed on Schedule 9 of WCA1) and others which are to the detriment of native wildlife (using professional judgement)2 cover less than 5% of the total vegetated area.	Fail	Pass	Pass	Pass									
	Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	Fail	Pass	Pass	Pass									
D	**Open mosaic habitat on previously developed land only:** The parcel shows spatial variation and forms a mosaic of bare substrate PLUS:- At least four early successional communities (a) to (i); Communities: (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland, (i) pools.	N/A	N/A	N/A	N/A									
E1	**Bioswale and SUDS only:** Plant species are mostly native. If non-native species are present these are not detrimental to the habitat or native wildlife.	N/A	N/A	N/A	N/A									
E2	**Bioswale and SUDS only:** Vegetation comprised of plant species suited to wetland or riparian situations.	N/A	N/A	N/A	N/A									
F	**Intensive green roofs:**The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).	N/A	N/A	N/A	N/A									
G	**Biodiverse green roofs only:** The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers.	N/A	N/A	N/A	N/A									
	Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc. are present.	N/A	N/A	N/A	N/A									
Condition (Green roofs and Open Mosaic: 3 core criteria AND good condition in criterion C AND passes additional criterion for specific hab type (D, F or G) = good; passes 2-3 criteria OR 4 criteria without good condition in criterion C = moderate; 0-1 criteria = poor. Boswale or SuDS: 3 core criteria AND good condition in criterion C AND all criteria for specific hab type = good; 3-4 criteria OR 5 criteria without good condition in criterion C = moderate; 2-0 criteria = poor. All other habitats: all 3 criteria AND good condition in criterion C = good; 2-3 criteria OR all 3 criteria but without good condition in criterion C = moderate; 0-1 criteria = poor)		**Poor**	**Moderate**	**Moderate**	**Poor**									

HABITAT CONDITION ASSESSMENT MATRIX FOR STATUTORY BIODIVERSITY METRIC

Habitat type/criteria		Feature Reference																	
Ditch		D1		D2		D3		D4											
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Pass		Pass		Pass		Pass											
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	Fail		Fail		Fail		Fail											
C	There is less than 10% cover of filamentous algae and or duckweed *Lemna* spp. (these are signs of eutrophication).	Pass		Pass		Pass		Pass											
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	Fail		Fail		Fail		Fail											
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Pass		Pass		Pass		Pass											
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	Fail		Fail		Fail		Fail											
G	Less than 10% of ditch is heavily shaded	Fail		Fail		Fail		Fail											
H	Absence of non-native plant and animal species	Pass		Pass		Pass		Pass											
Condition		**Poor**		**Poor**		**Poor**		**Poor**											

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HABITAT CONDITION ASSESSMENT MATRIX FOR STATUTORY BIODIVERSITY METRIC

Habitat type/criteria		Feature Reference						
Individual trees / Tree Blocks and Groups		**T11**	**T12 (V)**	**T14 (V)**	**T16**	**T17**	**T18**	**T19**
	Tree species	English Oak	English Oak	English Oak	English Oak	English Oak	English Oak	English Oak
	Tree size	L	XL	XL	L	XL	XL	XL
	Arb number	5345	5369	1068	2744	2743	6000	858
A	Tree is a native species (or at least 70% within block are native)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
B	Tree canopy is predominantly continuous with gaps less than 10% of total area and no more than 5m wide individually. Automatically passed for individual trees.	Pass	Pass	Pass	Pass	Pass	Pass	Pass
C	Tree is mature (or at least 50% within block are mature)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Pass	Pass	Pass	Pass	Pass	Pass	Pass
E	Natural ecological niches for vertebrates and invertebrates are present (e.g. deadwood, cavities, ivy or loose bark)	Pass	Pass	Pass	Pass	Pass	Pass	Pass
F	More than 20% of tree canopy is oversailing vegetation beneath	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Condition		**Good**	**Good**	**Good**	**Good**	**Good**	**Good**	**Good**

Individual trees / Tree Blocks and Groups continued		**TG24**	**TG27**	**TG28**	**T30 (V)**	**T31 (V)**	**T32**	
	Tree species	Ash	Various	Various	English Oak	English Oak	Alder	
	Tree size	M	3S, 2M	3S, 3M	XL	XL	M	
	Arb number	261, 3262, 3263	5480, 1986, 1983, 4485, 4346, 456		5164	5160	6053	
A	Tree is a native species (or at least 70% within block are native)	Pass	Pass	Pass	Pass	Pass	Pass	
B	Tree canopy is predominantly continuous with gaps less than 10% of total area and no more than 5m wide individually. Automatically passed for individual trees.	Fail	Fail	Fail	Pass	Pass	Pass	
C	Tree is mature (or at least 50% within block are mature)	Fail	Fail	Fail	Pass	Pass	Fail	
D	Little or no evidence of adverse impacts from human activities (e.g. vandalism, herbicide, agricultural activity) and no current regular pruning regime (so that trees retain more than 75% of expected canopy)	Pass	Pass	Pass	Pass	Pass	Fail	
E	Natural ecological niches for vertebrates and invertebrates are present (e.g. deadwood, cavities, ivy or loose bark)	Fail	Fail	Fail	Pass	Pass	Pass	
F	More than 20% of tree canopy is oversailing vegetation beneath	Pass	Pass	Pass	Pass	Pass	Pass	
Condition		**Moderate**	**Moderate**	**Moderate**	**Good**	**Good**	**Moderate**	

HABITAT CONDITION ASSESSMENT MATRIX FOR STATUTORY BIODIVERSITY METRIC

Criteria				Feature Reference											Notes (such as justification)
				H1	H3	H4	H5	H6	H7	H8A	H8B	H9	H10	H11	
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	Pass	Pass	Pass	Pass	Fail	Pass	Fail	Pass	Pass	Pass	Pass	
B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass	Pass	Pass	
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles *Urtica* spp., cleavers *Galium aparine* and docks *Rumex* spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Fail	Pass	Fail	Pass	Fail	Fail	Pass	Pass	Fail	Fail	Pass	
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website[4], as well as the BSBI website[5] where the 'Online Atlas of the British and Irish Flora'[6] contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website[7].	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (for example, excessive hedgerow cutting).	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
Additional group - applicable to hedgerows with trees only															
E1.	Tree class	There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient[8]), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	This criterion addresses if there are a range of age-classes or morphologies which allow for replacement of trees and provide opportunities for different species.	N/A	N/A	N/A	N/A	N/A	N/A	Pass	N/A	N/A	N/A	N/A	
E2.	Tree health	At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	This criterion identifies if the trees are subject to damage which compromises the survival and health of the individual specimens.	N/A	N/A	N/A	N/A	N/A	N/A	Fail	N/A	N/A	N/A	N/A	
Condition				**Good**	**Good**	**Good**	**Good**	**Good**	**Good**	**Moderate**	**Good**	**Good**	**Good**	**Good**	

Condition categories for hedgerows without trees		
Category	**Category Requirements**	**Metric Score**
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 4 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and C2 = Moderate condition).	2
Poor	Fails a total of more than 4 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1
Condition categories for hedgerows with trees		
Category	**Category Requirements**	**Metric score**
Good	No more than 2 failures in total; **AND** No more than 1 failure in any functional group.	3
Moderate	No more than 5 failures in total; **AND** Does not fail both attributes in more than one functional group (for example, fails attributes A1, A2, B1, C2 and E1 = Moderate condition).	2
Poor	Fails a total of more than 5 attributes; **OR** Fails both attributes in more than one functional group (for example, fails attributes A1, A2, B1 and B2 = Poor condition).	1

HABITAT CONDITION ASSESSMENT MATRIX FOR STATUTORY BIODIVERSITY METRIC

Criteria		Feature Reference										Notes (such as justification)
		TL1	TL2	TL3	TL4	TL5						
A	At least 70% of trees are native species.	Pass	Pass	Pass	Fail	Fail						
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Pass	Pass	Pass	Pass	Fail						
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	Fail	Pass	Fail	Pass	Fail						
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice2.	Pass	Pass	Fail	Pass	Pass						
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Pass	Pass	Pass	Pass	Pass						
Condition (5 criteria = good; 3-4 criteria = moderate; 2 criteria or fewer = poor)		**Moderate**	**Good**	**Moderate**	**Moderate**	**Poor**						

Condition + Encroachment Reporting Sheet: RIVERS and STREAMS

River Condition Assessment (RCA) + Encroachment results for: Priority rivers, Other rivers and streams,

Site name/location:	Land south of Crawley Down Road	**Unique river section reference:**	WC1A - North
GPS of MoRPh5	TQ 33969 37520	**River section length:**	

Rivers and streams form naturally draining networks within the wider landscape.
A long history of channel modification and artificial water body creation has led to widespread loss of naturally formed and functioning habitats.

The River Condition Assessment (RCA) method requires one or more MoRPh5 sub-reach sample(s) for a longer length of channel, the river(or canal) section, that has consistent condition throughout and is represented by a single line within the Biodiversity Metric tool.

This sheet provides information about the full river (or canal) section length based on a site walkover plus representative RCA (MoRPh5) results for this section.

RCA River Type and Habitat Description for full river section (from walkover survey)

THE RESULTS OF THE 32 RCA INDICATORS FOR EACH RIVER SECTION SHOULD BE INSERTED BELOW WITH NOTES TO EXPLAIN RECOMMENDATIONS FOR THE WHOLE CHANNEL LENGTH:

Condition Assessment Criteria		RCA Index values	Notes / Justification
RCA INDEX ID	**RCA INDEX NAME**	**Insert values -4 to 0 OR 0 to 4; Highlight those >2 OR <-2**	**Explain where significant, the influence of high/low RCA indices on overall river condition**
BANK TOP			
B1	Bank top vegetation structure	2	
B2	Bank top tree feature richness	2	
B3	Bank top water-related features	0	
B4	*Bank top NNIPS cover*	0	
B5	*Bank top managed ground cover*	-2	
BANK FACE			
C1	Bank face riparian vegetation structure	2	
C2	Bank face tree feature richness	1	
C3	Bank face natural bank profile extent	3	
C4	Bank face natural bank profile richness	3	
C5	Bank face natural bank material richness	2	
C6	Bank face bare sediment extent	4	
C7	*Bank face artificial bank profile extent*	0	
C8	*Bank face reinforcement extent*	-1	
C9	*Bank face reinforcement material severity*	-2	
C10	*Bank face NNIPS cover*	0	
CHANNEL MARGIN			
D1	Channel margin aquatic vegetation extent	1	
D2	Channel margin aquatic morphotype richness	1	
D3	Channel margin physical feature extent	2	
D4	Channel margin physical feature richness	1	
D5	*Channel margin artificial features*	-1	
CHANNEL BED			
E1	Channel aquatic morphotype richness	0	
E2	Channel bed tree features richness	2	
E3	Channel bed hydraulic features richness	2	
E4	Channel bed natural features extent	3	
E5	Channel bed natural features richness	2	
E6	Channel bed material richness	3	
E7	*Channel bed siltation*	0	
E8	*Channel bed reinforcement extent*	0	
E9	*Channel bed reinforcement severity*	0	
E10	*Channel bed artificial features severity*	-4	This entire negative score originates from the culvert presence in Survey 2
E11	*Channel bed NNIPS extent*	0	
E12	*Channel bed filamentous algae extent*	-3	

Overview of RCA and river section assessment

River Condition Assessment PRELIMINARY SCORE:	**0.895**	**River Type and class bands:**	**K**
River Shape index:	**1.619**	**Is the river channel OVERDEEP?** *If yes, what supporting evidence is provided?*	**Likely Yes**
River Condition Assessment FINAL CLASS:	**Fairly Poor**	**IS THE RCA FINAL CLASS MODIFIED ?** *If yes, why and what supporting evidence is provided?*	**Dropped a class due to overdeepening**

Condition + Encroachment Reporting Sheet: RIVERS and STREAMS

River Condition Assessment (RCA) + Encroachment results for: Priority rivers, Other rivers and streams,

Site name/location:	Land south of Crawley Down Road	**Unique river section reference:**	WC1B - Central
GPS of MoRPh5	TQ 33969 37520	**River section length:**	

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This sheet provides information about the full river (or canal) section length based on a site walkover plus representative RCA (MoRPh5) results for this section.

RCA River Type and Habitat Description for full river section (from walkover survey)

THE RESULTS OF THE 32 RCA INDICATORS FOR EACH RIVER SECTION SHOULD BE INSERTED BELOW WITH NOTES TO EXPLAIN RECOMMENDATIONS FOR THE WHOLE CHANNEL LENGTH:

Condition Assessment Criteria		RCA Index values	Notes / Justification
RCA INDEX ID	**RCA INDEX NAME**	**Insert values -4 to 0 OR 0 to 4; Highlight those >2 OR <-2**	**Explain where significant, the influence of high/low RCA indices on overall river condition**
BANK TOP			
B1	Bank top vegetation structure	4	
B2	Bank top tree feature richness	1	
B3	Bank top water-related features	1	
B4	*Bank top NNIPS cover*	-1	
B5	*Bank top managed ground cover*	-2	
BANK FACE			
C1	Bank face riparian vegetation structure	3	
C2	Bank face tree feature richness	2	
C3	Bank face natural bank profile extent	3	
C4	Bank face natural bank profile richness	2	
C5	Bank face natural bank material richness	2	
C6	Bank face bare sediment extent	3	
C7	*Bank face artificial bank profile extent*	0	
C8	*Bank face reinforcement extent*	0	
C9	*Bank face reinforcement material severity*	0	
C10	*Bank face NNIPS cover*	0	
CHANNEL MARGIN			
D1	Channel margin aquatic vegetation extent	2	
D2	Channel margin aquatic morphotype richness	2	
D3	Channel margin physical feature extent	2	
D4	Channel margin physical feature richness	2	
D5	*Channel margin artificial features*	0	
CHANNEL BED			
E1	Channel aquatic morphotype richness	1	
E2	Channel bed tree features richness	3	
E3	Channel bed hydraulic features richness	3	
E4	Channel bed natural features extent	2	
E5	Channel bed natural features richness	2	
E6	Channel bed material richness	2	
E7	*Channel bed siltation*	-1	
E8	*Channel bed reinforcement extent*	0	
E9	*Channel bed reinforcement severity*	0	
E10	*Channel bed artificial features severity*	-4	Entirely originating from the majorr weir and the presence of trash
E11	*Channel bed NNIPS extent*	0	
E12	*Channel bed filamentous algae extent*	0	

Overview of RCA and river section assessment

River Condition Assessment PRELIMINARY SCORE:	**1.595**	**River Type and class bands:**	**K**
River Shape index:	**5.41**	**Is the river channel OVERDEEP?** *If yes, what supporting evidence is provided?*	**Likely No**
River Condition Assessment FINAL CLASS:	**Fairly Good**	**IS THE RCA FINAL CLASS MODIFIED ?** *If yes, why and what supporting evidence is provided?*	**No**

Condition + Encroachment Reporting Sheet: RIVERS and STREAMS

River Condition Assessment (RCA) + Encroachment results for: Priority rivers, Other rivers and streams,

Site name/location:	Land south of Crawley Down Road	**Unique river section reference:**	WC1C - South
GPS of MoRPh5	TQ 33588 37328	**River section length:**	

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This sheet provides information about the full river (or canal) section length based on a site walkover plus representative RCA (MoRPh5) results for this section.

RCA River Type and Habitat Description for full river section (from walkover survey)

THE RESULTS OF THE 32 RCA INDICATORS FOR EACH RIVER SECTION SHOULD BE INSERTED BELOW WITH NOTES TO EXPLAIN RECOMMENDATIONS FOR THE WHOLE CHANNEL LENGTH:

Condition Assessment Criteria		RCA Index values	Notes / Justification
RCA INDEX ID	**RCA INDEX NAME**	**Insert values -4 to 0 OR 0 to 4; Highlight those >2 OR <-2**	**Explain where significant, the influence of high/low RCA indices on overall river condition**
BANK TOP			
B1	Bank top vegetation structure	2	
B2	Bank top tree feature richness	2	
B3	Bank top water-related features	0	
B4	*Bank top NNIPS cover*	0	
B5	*Bank top managed ground cover*	0	
BANK FACE			
C1	Bank face riparian vegetation structure	1	
C2	Bank face tree feature richness	1	
C3	Bank face natural bank profile extent	3	
C4	Bank face natural bank profile richness	3	
C5	Bank face natural bank material richness	2	
C6	Bank face bare sediment extent	2	
C7	*Bank face artificial bank profile extent*	0	
C8	*Bank face reinforcement extent*	0	
C9	*Bank face reinforcement material severity*	0	
C10	*Bank face NNIPS cover*	0	
CHANNEL MARGIN			
D1	Channel margin aquatic vegetation extent	2	
D2	Channel margin aquatic morphotype richness	2	
D3	Channel margin physical feature extent	1	
D4	Channel margin physical feature richness	2	
D5	*Channel margin artificial features*	0	
CHANNEL BED			
E1	Channel aquatic morphotype richness	0	
E2	Channel bed tree features richness	3	
E3	Channel bed hydraulic features richness	2	
E4	Channel bed natural features extent	3	
E5	Channel bed natural features richness	2	
E6	Channel bed material richness	3	
E7	*Channel bed siltation*	-2	
E8	*Channel bed reinforcement extent*	0	
E9	*Channel bed reinforcement severity*	0	
E10	*Channel bed artificial features severity*	0	
E11	*Channel bed NNIPS extent*	0	
E12	*Channel bed filamentous algae extent*	0	

Overview of RCA and river section assessment

River Condition Assessment PRELIMINARY SCORE:	**1.741**	**River Type and class bands:**	**K**
River Shape index:	**1.638**	**Is the river channel OVERDEEP?** *If yes, what supporting evidence is provided?*	**Likely Yes**
River Condition Assessment FINAL CLASS:	**Moderate**	**IS THE RCA FINAL CLASS MODIFIED ?** *If yes, why and what supporting evidence is provided?*	**Dropped a class due to overdeepening**

ecology • landscape planning • arboriculture

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