# Ecological Impact Assessment

May 2025

**Land at Ratby Lane, Markfield, Leicestershire**

Prepared by
CSA Environmental

On behalf of
Taylor Wimpey UK Limited

Report No: CSA/2550/01

CSA environmental

urban design | ecology | landscape | heritage

This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

| Report Reference | Revision | Date | Prepared by | Approved by | Comments |
|---|---|---|---|---|---|
| CSA/2550/01 | - | 17/11/2023 | AP | KC | Draft issue |
| | A | 06/02/2024 | AP | KC | Updated redline |
| | B | 23/05/2025 | GG | AP | Updated to reflect latest scheme |

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# EXECUTIVE SUMMARY

Residential development is proposed at Land at Ratby Lane, Markfield, for which outline planning permission will be sought.

CSA Environmental was instructed by Taylor Wimpey UK Limited to undertake an Ecological Impact Assessment (EcIA) of the proposed development. To inform this assessment, a desktop study followed by a suite of targeted species and habitat surveys were undertaken including bat, great crested newt and badger surveys.

The Site presently comprises a single arable field bounded by a mix of hedgerows, fencing and woodland. The scheme seeks to retain and buffer hedgerows with infill planting, with the exception of a small section of hedgerow to the west to facilitate construction of the access. Further compensatory mixed scrub and grassland planting is provided within open space areas. The southern and western on-site hedgerows are designated as Markfield, Groby, Ratby and Green Lane Hedgerows Potential Local Wildlife Site.

Protected species surveys have concluded that badger use on-site habitats, evidenced by three sett entrances recorded along the eastern and southern boundaries. The Site supports populations of foraging and dispersing common and widespread bat species, whilst great crested newts have been recorded within a pond to the south of the outfall. Mitigation has been proposed to address potential impacts on these protected species and ensure compliance with applicable legislation.

The Development Framework Plan which has been prepared in support of the application will deliver tangible and quantifiable benefits to biodiversity. An assessment of the projected net change in 'biodiversity units' using DEFRA's Statutory Biodiversity Metric demonstrates that the proposed development would be expected to result in an on-site net gain.

Based on successful implementation of the proposed avoidance, mitigation and enhancement measures, the development is not anticipated to result in any significant residual negative effects on important ecological features. Furthermore, it has been demonstrated that the scheme can secure a net gain in biodiversity through on-site habitat creation. The scheme is considered to accord with all relevant nature conservation legislation, as well as with the provisions of the Hinckley and Bosworth Borough Local Development Framework Strategy.

# 1.0 INTRODUCTION

1.1 This report has been prepared by CSA Environmental on behalf of Taylor Wimpey UK Limited. It sets out the findings of an Ecological Impact Assessment (EcIA) for proposed development at Land at Ratby Lane, Markfield (hereafter referred to as 'the Site'). Residential development is proposed at the Site, for which outline planning permission will be sought.

1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).

1.3 The Site occupies an area of c. 5.46ha and is located around central grid reference SK 49580 09505, located to the south-east of Markfield. It primarily consists of an arable field bounded by woodland to the south and east, and native hedgerows around the periphery (see Habitats Plan in Appendix A).

1.4 An initial desk study and field survey, including a UK Habitat Classification survey were undertaken for the Site in April 2021 as part of a Preliminary Ecological Appraisal, and updated in September 2023, the findings of which are presented herein. In addition, the below further survey work was undertaken between April and September 2021and updated between April and September 2023 and 2025. Further update surveys are currently underway and are scheduled to be completed by October 2025.

- Habitat Condition Assessments (May to July 2025)
- Bat Activity Surveys (May to September 2025)
- Badger Survey (March 2025)
- Great Crested Newt Surveys (April to June 2025)

1.5 This EcIA aims to:

- Establish baseline ecological conditions at the Site.
- Determine the importance of ecological features which could be affected by the proposed scheme.
- Identify any likely significant impacts or effects of the proposed development on important ecological features, in the absence of mitigation, including cumulative impacts.
- Set out any measures necessary to effectively avoid or mitigate likely significant effects, and identify residual impacts.
- Identify any compensation measures required to offset residual impacts.

- Set out potential ecological enhancement measures that may be secured by the proposed scheme, and quantify the overall net change in biodiversity using the Statutory Biodiversity Metric.
- Confirm how proposed mitigation, compensation and enhancement measures could be secured.
- Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be imposed by the relevant authority.

1.6 An EcIA can be used for the appraisal of projects of any scale. This is a best practice evaluation process, recommended by CIEEM (2018). It is intended that the evaluation of findings presented here-in will aid the Hinckley and Bosworth Borough Council in their review of the planning application.

# 2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE

## Legislation

2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EcIA includes:

- The Conservation of Habitats and Species Regulations 2017 (as amended)
- The Wildlife and Countryside Act 1981 (as amended)
- The Natural Environment and Rural Communities (NERC) Act 2006
- The Protection of Badgers Act 1992
- The Environment Act 2021

2.2 This legislation has been addressed, as appropriate, in the production of this report with further information provided in Appendix B.

## National Planning Policy

2.3 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity. Further details are provided in Appendix B.

2.4 Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). The Natural Environment PPG addresses biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services. Further guidance in respect of statutory obligations for biodiversity conservation within the planning system is provided by Government Circular 06/2005.

## Local Planning Policy

2.5 A number of local planning policies relate to ecology, biodiversity and/or nature conservation. These are summarised in Appendix B.

## Standing Advice

2.6 Natural England Standing Advice regarding protected species aims to support local authorities and forms a material consideration in determining applications in the same way as any individual response received from Natural England following consultation. Standing advice has therefore been given due consideration, alongside other detailed guidance documents, in the scoping of ecological surveys and production of this report.

# 3.0 METHODS

## Desk Study

3.1 An ecological desk study was undertaken in April 2021 and updated in September 2023 comprising a review of online resources and biological records centre data as detailed below.

3.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed to identify the following ecological features (based on the Site's likely 'zone of influence' in respect of such features):

- Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites within 10km of the Site (including possible/proposed sites)
- Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR) within 3km of the Site
- Other relevant data e.g. Ancient Woodland Inventory within 1km of the Site

3.3 A review was undertaken of the location of any such designations, their distance from and connectivity with the Site, and the reasons for their designation. This information was used to determine whether they may be within the proposed development's Zone of Influence (ZoI).

3.4 Leicestershire and Rutland Environment Records Centre (LRERC) was contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence of effects upon non-statutory designations and protected or notable habitats and species.

3.5 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.

3.6 In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken to identify ponds within 500m of the Site which may have potential to support breeding great crested newts *Triturus cristatus*, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography.

3.7 Where possible under the terms of the data provider, relevant desk study data are presented in Appendix C.

## Field Surveys

3.8 An initial extended Phase 1 Habitat Survey was carried out in fine and dry weather conditions on 21 April 2021, encompassing the Site and immediately adjacent habitats that could be viewed. An update Habitat Classification ('UKHab') survey was carried out in fine and dry weather conditions on 17 April 2023, led by Alex Perry ACIEEM and assisted by Becca King.

3.9 UKHab is a unified and comprehensive system for mapping and classifying habitats, designed to provide a simple and robust approach to surveying and monitoring, and replaces Phase 1 Habitat survey methods. The method allows for identification of important habitat types, including habitats of Principal Importance under Section 41 (S41) of the NERC Act (2006) and Habitats Directive Annex I habitats. This method also allows for direct translation of habitats into the Statutory Biodiversity Metric (DEFRA, 2023).

3.10 The following parameters were adopted for the UKHab survey undertaken for this PEA:

- UKHab Professional edition (Butcher *et al*., 2020, commercial End User Licence Agreement (EULA))
- Minimum Mappable Unit (MMU):
    - $10m^2$/0.001ha (polygons)
    - 5m (linear)
- Primary Habitats recorded to a minimum of Level 2 (see below) with UKHab codes provided
- Mandatory secondary codes used
- Base-mapping comprising a combination of aerial imagery and topographic information

3.11 Primary Habitats are recorded to a minimum of Level 2. Where the survey is conducted at an appropriate time of year (e.g. May to July for grassland) habitats may be recorded to Level 3, 4 or 5, only if conditions and the experience of the surveyor allow.

3.12 To assist with classification of grassland habitats quadrat samples were taken during UKHab survey on 17 July 2023 by Alex Perry and Tom Richards MCIEEM, both FISC Level 4. Representative sample locations were identified within each grassland parcel, spread evenly to avoid habitat transitions or ecotones, following a 'W' shape through the parcel and a covering a minimum of five sampling locations. Both average (mean) species count per $m^2$ and peak species counts are reported for comparison.

3.13 An update walkover was undertaken by Alex Perry ACIEEM and Georgina Gard on 18 March 2025, with quadrats of the habitats

completed alongside Habitat Condition Assessments to inform the Biodiversity Net Gain (see BNG Design Stage Report CSA/2550/06).

3.14 Identification of habitat stands were made arbitrarily by the surveyor based upon obvious habitat structure, composition or other delineating feature (e.g. field or enclosure).

3.15 Quadrats of 1m x 1m were used, repeated four times in each sample location (i.e. 2m x 2m or $4m^2$). This technique assists, for example, with distinguishing between modified (g4) and other neutral (g3c) grasslands (using the threshold of nine species per $m^2$, reporting an average of the four samples).

3.16 Alongside the UKHab survey, additional field survey information was collected, comprising:

- Detailed floral species lists recorded for each identified habitat/parcel
- Further habitat condition information based upon current Statutory Biodiversity Metric (DEFRA, 2023) condition assessment guidance
- Evidence of, or potential for, European Protected Species (EPS) (including bats, great crested newt, dormouse and otter)
- Evidence of, or potential for, other protected species (including birds, reptiles, water vole, badger and certain invertebrates)
- Evidence of, or potential for, other notable species (including S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)
- Any other survey information relevant to ecological matters

3.17 Results of the UKHab survey are presented on the Habitats Plan in Appendix A. Appendix D provides photographs of the habitats at the Site and Appendix E provides a list of floral species recorded in each habitat parcel. Nomenclature for higher plants within this report is consistent with the fourth edition of The New Flora of the British Isles (Stace, 2019).

<u>Further Survey Work</u>

3.18 The following detailed field survey work was carried out between April to September 2021 and April to September 2023, with full methods and results provided in the relevant Appendices:

- Preliminary Roost Assessment - Trees (Appendix G)
- Bat Activity Surveys (Appendix G)
- Badger Survey (Appendix H)
- Great Crested Newt Habitat Suitability Index (Appendix I)
- Great Crested Newt Surveys (Appendix I)

3.19 Update survey work has been completed/is underway for the following:

- Bat Activity Surveys
- Badger Survey
- Great Crested Newt Surveys

### Limitations

3.20 There were no specific limitations to the desk study or field survey, which was conducted at an optimum time of year and in good conditions. Limitations to protected species surveys are addressed in the relevant appendices.

### Evaluation and Assessment

3.21 Ecological features are identified, evaluated and assessed in accordance with the CIEEM Guidelines for Ecological Impact Assessment (2018), with detailed methods provided in Appendix F.

3.22 It is an established principle (CIEEM, 2018) that EcIA is an iterative process. Specialist advice on the avoidance and mitigation of the potential negative effects of the proposed development has been input from an early design stage.

# 4.0 BASELINE ECOLOGICAL CONDITIONS

## Nature Conservation Designations

Statutory

4.1 There are no statutory designations covering any part of the Site.

4.2 No international statutory designations were identified within 10km of the Site.

4.3 The Site falls within the fluvial catchment of the Soar River, which discharges to the Humber Basin. It shares no hydrological connectivity with any statutory river, wetland, estuary or coastal designation which has been identified in advice from Natural England as being vulnerable to increases in nutrient loading from new development.

4.4 Five national statutory designations were identified within 3km of the Site. These statutory designations are described in Table 1 below.

4.5 Footpath connections are present between the Site and a number of the SSSI's, such as Ulverscoft Valley SSSI. However, given the distance from the Site and the lack of a car park, no appreciable increase in visitor numbers is considered likely to this designation.

4.6 The remaining designations have local carparks meaning visitors may drive from further afield for recreational visits. Bradgate Park and Cropston Reservoir SSSI contains multiple carparks and cafes and is likely to be managed in such a way to support high visitor numbers. As such, any minor increase in visitors to this designation is considered unlikely to result in a negative effect.

4.7 Although there is no direct connectivity through the local footpath network, Sheet Hedges Wood SSSI and Groby Pool and Woods SSSI both have an associated car park. As such, local residents may travel by car to visit these designations on occasion. Information available on the National Forest website states that access to the SSSI portion of Sheet Hedges Wood is via a nature trail only, which is likely to be managed to accommodate higher visitor numbers and avoid impacts to sensitive features. As such, the minor increase in visitors to this designation is unlikely to result in a negative effect.

4.8 Groby Pool and Woods SSSI is serviced by a free car park and as such is likely to receive higher visitor numbers. Natural England's SSSI Impact Risk Zones tool has also been considered, which allows a rapid initial assessment to be made of the potential risks posed by development types to SSSI designations. The Site falls partially within the SSSI impact risk zone of Groby Pool and Woods SSSI, citing any developments with a net increase in 100 residential units outside of existing settlements may potentially result in negative impacts. Whilst the Site comprises semi-

natural habitat at present, it is located adjacent to Markfield and therefore is not considered to comprise 'rural residential' development. It is acknowledged that there may be occasional additional visitors to this designation, but due to the distance from the Site, and the availability of alternative woodland walking routes in the locality, it is likely new residents will largely use other more local opportunities.

4.9 As SSSIs are administered and designated under national legislation, these sites are considered to be important at the National level.

4.10 No local statutory designations were identified within 3km of the Site.

4.11 National, Local and international statutory designations are scoped out of further assessment.

4.12 The above statutory designations are described in Table 1 below.

Non-Statutory

4.13 A total of 17 non-statutory designations were identified within 1km of the Site. These non-statutory designations are described in Table 1 below. A number of LWS were returned, including several labelled as candidate, notified and potential. Candidate LWS are those with clear evidence that the LWS designation criteria would be met but they have not yet been formally accepted. Notified and Candidate sites have the same status with regards to planning policy and Potential sites are those which are likely to meet the designation criteria but further surveys are needed to confirm this. As such, all of the designations with the above prefix have been considered within this report.

4.14 A number of designations comprise mature trees or stretches of hedgerow. As off-site designations are less likely to be impacted by proposals, those relating to hedgerows and mature trees over 0.5km from the Site have been omitted from the table below.

4.15 The closest of these non-statutory designations were Markfield, Groby, Ratby and Green Lane Hedgerows (Potential) LWS which form the western and southern boundaries of the Site. As Markfield, Groby, Ratby and Green Lane Hedgerows (Potential) LWS forms part of the Site boundary, there is potential for negative effects to arise as a result of the proposed development. As this designation comprises on-site habitats, their importance and any associated impacts are discussed under the relevant habitat heading below.

4.16 Bradgate House, Groby (Potential) LWS is located c. 0.5km east of the Site and comprises the previously inhabited Bradgate House (now ruins) and associated estate land and gardens. Although the designation appears to be open to the public and is frequently used for walking, Bradgate House is located on the opposing side of the A50 dual

carriageway. As such, the number of visitors from the proposed development is anticipated to be minor.

4.17 A large swathe of ancient semi-natural woodland on the opposing side of the A50 is designated as Groby, Hedgerow (Candidate) LWS, located c. 0.2km east. Although this designation is situated near to the Site, visitors would need to cross the busy A50 dual carriageway to access the designation. There may be a minor increase in visitors as a result of the proposed development, but due to the size of the LWS and number of available walking routes in the locality, the effects of the increase are anticipated to be minimal.

4.18 The remaining designations largely comprise small areas of habitat on private land, such as a stretch of hedgerow or parcel of grassland. No hydrological connection appears to be present between the Site and remaining designations, and an increase in recreational pressure is not anticipated due to the small and publicly inaccessible nature of the designations. As such, no negative effects are anticipated for any of the remaining LWS.

4.19 As LWSs are designated according to criteria applied in a county context, these sites are considered to be ecologically important at the County level.

**Table 1.** Statutory and non-statutory designations within search radii

| Site Name & Designation | Distance & Direction from Survey Area | Special Interests or Qualifying Features |
|---|---|---|
| International Designations within 10km | | |
| - | - | - |
| National Designations within 3km | | |
| Ulverscoft Valley SSSI | c. 1.1km north | Unimproved grassland with areas of acidic character. Fragments of heath, woodland and wetlands support nationally scarce fragrant orchid and flea sedge. Adjacent acidic marshy grassland is dominated by purple moor-grass, tufted hair-grass, bilberry and rushes. The site supports protected bird species including, woodcocks, yellow wagtails and redstarts. |
| Groby Pool and Woods SSSI | c. 1.9km south-east | Variety of habitats including, alder and oak woodland, grassland, marsh and open water. The site supports niche plant communities of acidic soils with the largest natural body of water in Leicestershire. Supports wintering waterfowl, breeding bird communities and a variety of invertebrate species. |
| Cliffe Hill Quarry SSSI | c. 2km north-west | Designated for geological interests. |

| | | |
|---|---|---|
| Bradgate Park and Cropston Reservoir SSSI | c. 2.2km east | The site is a good drainage area for the midlands, with one of the last remaining wet heathlands in the county and nationally important geological features. The ancient oak parkland supports marginal plant and diverse bird communities. Saxicolous lichens on dry acidic grasslands provide refuge for the regionally scarce bilberry. Small pools contain bog moss and support locally scarce invertebrates including, broad-bodied chaser dragonfly and water beetles. |
| Sheet Hedges Wood SSSI | c. 2.8km south-east | Ancient woodland compromising of ash and alder, on clay soils. The site has a range of native wildflower species including, toothwort and giant bellflower. |
| Local Designations within 3km | | |
| - | - | - |
| Non-statutory Designations within 1km | | |
| Markfield, Groby, Ratby and Green Lane Hedgerows pLWS | Western and southern Site boundary | Potential LWS due to its dense hedgerows. |
| Groby, Hedgerow LWS | c. 0.2km east | Candidate LWS for historic ancient semi-natural woodland. |
| Newton Linford, Land off Markfield Lane LWS | c. 0.4km north-east | Candidate LWS due to its mixed grassland |
| Lower Grange Farm Hedge, Markfield LWS | c. 0.4km west | Candidate LWS designated for species rich hedgerow adjacent to stream. |
| Cover Cloud Field Neutral Grassland LWS | c. 0.5km north | Designated for mixed grassland and hedgerow habitats which support a diverse range of flora species including wood horsetail *Equisetum sylvaticum.* |
| Bradgate House, Groby LWS | c. 0.5km south-west | Potential LWS designated for mesotrophic grassland, parkland, meadow, woodland and pond habitats with mature trees. |
| Cover Cloud Wood LWS | c. 0.5km north | Ancient semi-natural broadleaved woodland supporting a range of ground-flora species including bluebell *Hyacinthoides Non-scripta.* |
| Heyday Hays Wood LWS | c. 0.5km north-east | Semi-natural woodland dominated by silver birch *Betula pendula,* with frequent mature oak *Quercus Robur* and rowan *Sorbus aucuparia*. Supporting diverse ground-flora including bluebell. |
| Home Farm LWS | c. 0.8km north-west | Mesotrophic grassland with areas of transitional mesotrophic and acid grassland, supporting IUCN Red Listed protected species. |
| Field North of Leicester Road LWS | c. 0.9km north-west | Transitional mesotrophic and wet grassland. |

Ancient Woodland

4.20 No ancient woodland has been identified covering any part of the Site or in the immediately adjacent land. Ancient semi-natural woodland has been identified within 1km of the Site, but present on the opposing side of the A50 dual carriageway. As such, ancient woodland is not anticipated to pose a constraint to development.

4.21 No trees on or adjacent to Site are listed on the Ancient Tree Inventory.

## Habitats and Flora

4.22 Habitats recorded on-site are illustrated in Appendix A and D with detailed species lists provided in Appendix E. Relevant UKHab codes are provided within parentheses for each habitat type recorded e.g. Other Neutral Grassland (g3c).

4.23 No invasive non-native plant species were identified during the extended Phase 1 Habitat survey or subsequent visits to the Site.

4.24 The biodiversity value of baseline habitat units has been determined through assessment using the DEFRA Statutory Biodiversity Metric.

Notable Flora Records

4.25 The LRERC provided a number of notable plant species within the search area. A total of 424 records of 63 notable plant species were identified within the search area, dating from 1999 to 2022. Those of potential relevance to the Site, and associated with the habitats present, include bird's-foot *Ornithopus perpusillus*, chicory *Cichorium intybus*, field woundwort *Stachys arvensis*, fragrant agrimony *Agrimonia procera*, slender trefoil *Trifolium micranthum*, smooth brome *Bromus racemosus*, trailing tormentil *Potentilla anglica* and velvet bent *Agrostis canina*. No notable flora were recorded within on-site habitats.

4.26 Also of note, are records of hybrid bluebell *Hyacinthoides x massartiana*, canadian waterweed *Elodea Canadensis*, cherry laurel *Prunus laurocerasus*, Himalayan balsam *Impatiens glandulifera*, Japanese knotweed *Fallopia japonica*, montbretia *C. x crocosmiiflora* and rhododendron *Rhododendron ponticum*, which are included within the Wildlife and Countryside Act's 1981 (as amended) Schedule 9 list of invasive non-native species. A total of 75 records of Schedule 9 species were provided within the search radius, however none were located on or adjacent to the Site.

4.27 Notable flora are considered to be likely absent and as such are scoped out of further assessment.

Cereal Crops (c1c)

4.28 The Site is dominated by an arable field under active cultivation. At the time of the surveys the field was found to be sown with a cereal crop.

4.29 Uncultivated grassland margins are present around all boundaries of the field, measuring c. 1m-1.5m in width. Species recorded include cock's-foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, dandelion *Taraxacum officinale agg.*, rosebay willowherb *Chamerion angustifolium*, lesser celandine *Ficaria verna*, common field-speedwell *Veronica persica*, spear thistle *Cirsium vulgare*¸ common ragwort *Jacobaea vulgaris* and cleavers Galium *aparine*.

4.30 Arable land is common and widespread in the local landscape and offers limited ecological value. This habitat is considered to be important at less than Local level and are scoped out of further assessment.

Modified Grassland (g4); Cattle Grazed (59)

4.31 Field F2 comprises modified grassland, which at the time of the field survey was grazed by cattle. Limited botanical diversity was noted within the sward, with species recorded including perennial ryegrass *Lolium perenne*, dandelion, with occasional common mouse-ear *Cerastium fontanum* and dock *Rumex sp.* Only a small linear strip of grassland within Field F2 is present within the Site boundary.

4.32 The grassland on-site is homogenous and heavily cattle grazed, resulting in a short sward. This habitat is considered to be important at the less than Local level and is scoped out of further assessment.

Other Woodland; Broadleaved (w1g) and Hedgerows (h2)

4.33 A woodland corridor is present along the south-western edge of Field F1, spanning the length of the Site and providing connectivity to a larger area to the south-east. The woodland is relatively recently planted, with online mapping showing it to have been planted between 2000 and 2006 and as such the trees within the woodland are young-mature.

4.34 Species present within the woodland include hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, oak *Quercus robur*, field maple *Acer campestre*, sycamore *Acer pseudoplatanus*, holly *Ilex aquifolium,* bramble and ivy *Hedera helix*. A public footpath runs from Ratby Lane easterly through the woodland.

4.35 The boundaries of the Site are marked by hedgerows to the north-west, a mixture of treeline and hedgerow to the south-east, a woodland corridor to the south-west and a mixture of hedgerow and fencing to the north-east, adjacent to residential gardens. The southern and western boundaries (B1 and B2) also comprise Markfield, Groby, Ratby and Green Lane Hedgerows (Potential) LWS. As such, these features should be afforded higher protection. These are described individually in Table 2 below and labelled on the Habitats Plan in Appendix A.

4.36 Hedgerows typically measure c. 1–2.5m in height x c. 0.5-1m wide and are dominated by hawthorn and blackthorn *Prunus spinosa*. Other woody species present include elder, ash *Fraxinus excelsior*, oak, beech

*Fagus sylvatica* and dogwood *Cornus sp*. Additional species present within the hedgerows include bramble *Rubus fruticosus agg*., ivy and holly.

**Table 2.** Summary of boundary features

| Boundary Ref. | Description | Woody species |
|---|---|---|
| B1 | c. 3m tall x c. 2m wide, managed hedgerow adjacent to road. | Hawthorn, blackthorn, holly, ash and privet, elder |
| B2 | c.1m tall x c. 0.5m wide, recently cut, adjacent to fence. | Blackthorn and elder |
| B3 | c. 4m tall x c. 2m wide, treeline. | Hawthorn, elder, oak, hazel and holly |
| B4 | c. 2m tall x c. 1m wide, defunct mixed hedgerow adjacent to residential gardens. | Hawthorn, oak, beech, privet, dogwood, holly and ash |
| B5 | c. 3m tall x c. 2m wide, managed hedgerow adjacent to residential gardens. | Hawthorn , holly, and privet |

4.37 All hedgerows are adopted as a Habitat of Principal Importance under the NERC Act 2006. The individual hedgerows on-site vary in their structural integrity and exhibit generally low species diversities, however, taken together, the hedgerows form valuable green corridors for wildlife on-site and in the local area and have intrinsic ecological value for a range of species. Collectively, including the Candidate LWS features, hedgerows and trees on-site are considered to be of importance at up to Local level.

4.38 Woodland offers a valuable habitat resource for a range of species, with the woodland on-site providing connectivity to the wider area. On balance this habitat is considered to be important at up to the Local level.

## Fauna

Bats

4.39 A total of 668 bat records were identified within the search area, dating from 1998 to 2022. These include the following species: common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *P. pygmaeus*, noctule *Nyctalus noctula*, Natterer's *Myotis nattereri*, Nathusius' pipistrelle *P. nathusii*, *Myotis* sp., Leisler's *Nyctalus leisleri* and brown long-eared *Plecotus auritus* bats.

4.40 Roosts of common and soprano pipistrelle, brown long-eared and *Myotis* were returned within search area, with the closest and most recent record in 2014 (c. 0.3km north of the Site), comprising 62 common pipistrelle bats and another nearby record of 101 common pipistrelles c.

0.4km north. Other records are related to bats in flight, with the closest record comprised of an individual, foraging common pipistrelle located c. 0.2km east of the Site in 2018.

4.41 Arable habitat on-site offers limited habitat suitability for bats, with boundary vegetation comprising hedgerows and grassland margins, as well as the woodland to the south and east providing more suitable foraging and dispersing opportunities for a number of bat species. Hedgerows on-site are well managed or located adjacent to residential dwellings, but still provide connectivity to the wider landscape, particularly those extending to the east.

4.42 Generally, trees within the woodland corridor and along hedgerows are young to semi-mature, however mature oaks are present along the boundaries of the Site, which may in turn offer roosting potential for bats.

*Ground-Based Tree Assessment*

4.43 A ground-based tree assessment was undertaken in April 2023 and updated in March 2025 to identify trees with potential roosting features for bats. Only trees within the site boundary were assessed, resulting in one mature oak tree, Tree T12 (in line with Tree Survey Report reference: BHA/4237/TS), identified as comprising a PRF-I, meaning it contains features with suitability to support individual bat species. All other trees were found to have 'Negligible' bat roosting potential. Full methods and results are provided in Appendix G.

*Bat Activity Surveys*

4.44 Three seasonal dusk night-time bat walkover surveys (previous terms as transects) have been undertaken at the Site in spring (May), summer (July) and autumn (September) 2023, and updated in 2025. To date, the spring night-time bat walkover has been completed (May). Full results of the 2023 surveys are set out in Appendix G, and the below provides an update on 2025 results to date. During the May night-time bat walkover, During survey common pipistrelle was the only species recorded. Bat activity during the surveys was mostly along the eastern and western boundaries of Field F1, with lower levels throughout the rest of the Site. No distinct foraging and dispersing habitats for bats were noted on-site.

4.45 Automatic static monitoring was also conducted in May, July and September 2023, using two static detectors on each occasion, the first located along the western boundary, and the second along woodland to the south. Static monitoring surveys have been updated in 2025, however due to a change in bat survey guidance, monthly static monitoring has been completed based on the Site's suitability as 'moderate' habitat for foraging and dispersing bats. To date, April and May static monitoring has been completed, with the remaining June to October monitoring due to be completed this year. To date, At least six

species were recorded during the static monitoring including common pipistrelle, soprano pipistrelle, noctule, Myotis species, brown long-eared and Nathusius' pip. In line with the transect surveys, common pipistrelle was the most frequently recorded species, with soprano pipistrelle the second most frequently recorded species. The remaining bat species were recorded at very low levels in comparison (<50 bat contacts per species).

4.46 These activity survey results are broadly consistent with those of the surveys carried out in 2021 and 2023. Full methods and results are provided in Appendix G.

4.47 Determination of importance of bat species recorded at the Site is based upon the surveys undertaken as detailed above, with regard to updated bat mitigation guidelines set out by Reason and Wray (2023). It should be noted that it is not possible to identify to species level all bats utilising the Site through call analysis alone. This is particularly the case regarding species within the Myotis genus, however is also relevant within the *Nyctalus* genera, when a Site is located within the known ranges of Leisler's bat *Nyctalus leisleri*. Based upon their known ranges, the data returned from the desk study and with regard to the habitats present on-site, it is assumed that two Myotis species are utilising the Site for foraging and commuting: Daubenton's bat Myotis daubentoniid and Natterer's bat Myotis nattereri. On the same basis, it is also assumed that both noctule Nyctalus noctula and Leisler's bat utilise the Site, despite the latter of each genera not being specifically identified through call analysis.

**Table 2.** Categorising Bats by Geographic Distribution and Rarity (adapted from Reason and Wray, 2023) Adapt as necessary for geographic location

| **Rarity in central England/Midlands (score assigned per species present)** | **Species known to occur in the same region as the Site** | **Species recorded on-site** | **Importance in geographical context** |
|---|---|---|---|
| Widespread in all geographies (1) | Common pipistrelle<br>Soprano pipistrelle<br>Brown long-eared | Common pipistrelle<br>Soprano pipistrelle<br>Brown long-eared | Local |
| Widespread in many geographies, but not as abundant in all (2) | Whiskered<br>Brandt's<br>Daubenton's<br>Natterer's<br>Noctule | Natterer's*<br>Noctule | Local |
| Rarer or restricted distribution (3) | Serotine<br>Leisler's<br>Nathusius' pipistrelle | Leisler's*<br>Nathusius' pipistrelle | Local |
| Rarest Annex II species and very rare (4) | Barbastelle<br>Lesser horseshoe | | County |
| **Total Assemblage Score/ Importance** | **26** | **13** | **Local** |

*Assumed present based on habitats present on-site and records returned within the desk study.

4.48 Based on a combination of desktop and survey data, the Site is anticipated to score 13 out of a maximum 26 (equating to 50%), resulting in an assemblage importance of between County and Regional Importance. Although Reason and Wray assess the Site to be importance at up to the Regional level, based on the low numbers of passes from each species, and dominance by widespread species, the bat assemblage is considered to important at up to the County Level.

Badger

4.49 The LRERC provided 45 records of badger *Meles meles* from within the search area, dating from 1999 to 2022. The closest record is of a road casualty dating from 2021, located c. 0.2km south-west from the Site. Two records of main setts were also returned in the data search, dating from 2009 and 2011 and located c. 1.3km north-west and c. 1.7km north respectively, both on the opposite side of the A50.

4.50 Mature hedgerows and woodland offer suitable sett building habitat for badger, whilst arable fields and grassland may provide foraging habitat.

4.51 A single suspected sett entrance and badger guard hair was identified along the eastern boundary of the Site in April 2021. An update badger survey was undertaken in April 2023 and updated in March 2025 (see Appendix H). The most recent survey found an increase in badger activity within the southern and eastern Site boundaries with three sett entrances identified, alongside fresh latrines and spoil.

4.52 Badgers are a widespread and common species; however, individuals and their setts are protected under the Protection of Badgers Act 1992. Given the presence of setts within the Site, in light of their legislative protection, badgers are taken to represent an important ecological feature.

Dormouse

4.53 No records of dormouse *Muscardinus avellanarius* were identified within the search area.

4.54 Hedgerows and woodland may offer limited suitability for dormouse if this species persisted in the local area. However, dormice are extremely rare in Leicestershire and are known to only persist in well-monitored areas of high-quality habitat such as ancient woodland. As such, this species is considered to be likely absent and can be scoped out of further assessment.

Riparian Mammals

4.55 A total of three records of water vole *Arvicola amphibius* were identified within the search area, all dating from 1999. The closest record is c. 1.7km south-west of the Site.

4.56 Two records of otter *Lutra lutra* was identified within the search area, located c.1.6km south-east of the Site, dating from 2020 and c. 1.8km north of the Site, dating from 2015.

4.57 There is no suitable aquatic habitat on or immediately adjacent to the Site. The closest suitable habitat is located at a tributary of Rotherly Brook c. 1.2km west from Site. Both species are considered to be likely absent from the Site and are scoped out of further assessment.

Other Mammals

*Brown Hare*

4.58 The data search returned one record of brown hare *Lepus europaeus* from within the search area, c. 1.4km north. Arable land has potential to support this species however the woodland and adjacent boundaries provide a sheltered environment, whereas hare typical prefer swathes of open arable land. No brown hare have been recorded during the field work.

4.59 This species has potential to utilise on-site habitats, however any population present is unlikely to be notable.

*Harvest Mouse*

4.60 One record of harvest mouse *Micromys minutus* was identified within the search area dating from 2020, located c. 1.3km north of the Site.

4.61 Suitable areas of habitat for harvest mice, such as tall reed or grassland, are generally absent from the Site. As such, this species is considered unlikely to utilise on-site habitats.

*Hedgehog*

4.62 Forty-six records of hedgehog *Erinaceus europaeus* were identified within the search area, dating from 2000 to 2022. The closest records were located along Jacqueline Road, c. 50m north of the Site. The majority of records were recorded within local residential areas.

4.63 Hedgerows, woodland and grassland habitats present on-site offer foraging, sheltering and dispersal habitat for hedgehogs. Whilst it's acknowledged that this species may use on-site habitats, a notable assemblage is not anticipated.

4.64 Based on the above information, notable mammals are scoped out of further assessment.

Birds

4.65 A total of 377 records of 40 bird species were identified within the search area, dating from 1998 to 2022. A total of 27 of the recorded species are listed as 'red' or 'amber' on the Birds of Conservation Concern (BoCC) list. Species of potential relevance to the Site include red kite *Milvus milvus,* lesser spotted woodpecker *Dryobates minor,* brambling *Fringilla montifringila,* fieldfare *Turdus pilaris* and barn owl *Tyto alba.*

4.66 The arable land offers potential habitat for farmland specialists, whilst the trees and hedgerows provide nesting habitat for a range of generalist species. A notable assemblage of breeding birds are not anticipated and this group of species is scoped out of further assessment.

Reptiles

4.67 A total of seven records of common lizard *Zootoca vivipara* were identified within the search area. Records are dated between 2005 and 2011. The closest of these records was located c. 1.3km north-west of the Site.

4.68 Dominant habitats present at the Site are of poor suitability for reptile species due to narrow, homogenous on-site field-margins and

management of grassland within Field F2 to a short sward with limited structure. The woodland corridor to the south of the Site is shaded, and therefore unlikely to offer suitable habitat for reptiles. As such, this group of species are considered to be likely absent and are scoped out of further assessment.

Amphibians

4.69 A total of 122 records of five amphibian species were identified within the search area, including great crested newt *Triturus cristatus*, common frog *Rana temporaria*, common toad *Bufo bufo,* palmate newt *Lissotriton helveticus* and smooth newt *Lissotriton vulgaris,* dating from 1998 to 2018. In total, 20 records are located within 0.5km of the Site, dating from 2005 to 2018. Eleven of these comprise records for great crested newt, dating from 2014.

4.70 The LRERC provided 27 records of great crested newt, two of which are located within ponds on adjacent land to the south-west of the Site (Ponds P1 and P2 in Appendix I), dating from 2014 and comprising a peak count of two and eight individuals respectively.

4.71 While the majority of the Site is dominated by arable land with some short grazed grassland, and as such is considered to be poorly suited to amphibians other than for dispersal, the woodland, hedgerows and field margins provide suitable sheltering and foraging opportunities for this species. In accordance with Natural England Guidelines (English Nature, 2001), a search of ponds within 500m of the Site was undertaken using aerial photography and OS maps to consider the potential for great crested newts to be in the area. This search identified six potential ponds, as shown in the Pond Plan in Appendix I (CSA/2550/125).

4.72 A pond scoping exercise and Habitat Suitability Index (HSI) assessment was undertaken for suitable ponds within the 500m radius of the Site to confirm the presence and location of each pond and their suitability to support a breeding population of great crested newts. Further to records of great crested newt within off-site Ponds P1 and P2, located c. 25m and 0.1km south-east of the narrow redline which extends in along the proposed SUDS linear outfall route, Pond P3 comprises a large, open duck pond set within amenity grassland c. 0.2km south also off site. Two ponds, Ponds P4 and P5, are present in woodland to the south-east of the Site at c. 0.3km and c. 0.4km east respectively. Pond P6 is present c. 0.4km north-east of the Site, on the opposite side of the A50, which is likely to form a barrier to dispersal and scoped out of further investigation.

4.73 Following HSI assessments, Ponds P1, P2 and P4 scored 'Average' for suitability for great crested newts. Ponds P3 and P5 scored 'Poor' on account of the major waterfowl and suspected fish presence in these ponds respectively.

4.74 Conventional bottle trapping/torchlight surveys for great crested newts were undertaken at Ponds P1, P2, P4 and P5 in 2021. No great crested newts were recorded in Ponds P4 or P5 and as such these ponds were subject to update surveying by eDNA sampling in 2023 and 2025.

4.75 Ponds P1 and P2 were subject to update conventional bottle trapping and torchlight surveys between 17 April and 25 May 2023. The 2021 surveys found great crested newts to be likely absent from Pond P1, with a small population with a peak count of two individuals present in Pond P2. In 2023, no great crested newts were recorded within the first four surveys at Pond P1, however as this feature is known to have supported great crested newts historically, a further two surveys were undertaken. The further two surveys at Ponds P1 recorded a peak count of one male great crested newt during the sixth survey, and eight great crested newts (six females and two males) in Pond P2. As such, both of these ponds are considered to support a 'small' population class size estimate in line with published guidance. No evidence of breeding, such as eggs, efts or juveniles were recorded in either pond in 2021 or 2023.

4.76 Further update bottle trapping and torchlight surveys of Ponds P1 and P2 were undertaken between 30 March and 14 May 2025. The first four surveys of Pond P1 found no great crested newts however as this pond is known to have previously supported great crested newts it was taken forward for population monitoring. No great crested newts were recorded during the fifth survey at Pond P1, with the sixth survey due to be completed in June.

4.77 The first four surveys of Pond P2 recorded a peak count of two great crested newts (one male during the first survey, one male during the third survey and one female during the fourth). No great crested newts were recorded during the fifth survey. Pond P2 is considered to support a 'small' population class size estimate in line with published guidance. No evidence of breeding (eggs, efts or juveniles) was recorded in either pond in 2025.

4.78 Water samples for both Ponds P4 and P5 returned negative eDNA results in 2023 and 2025, confirming the continued likely absence of great crested newts, following no great crested newts recorded during 2021 presence / likely absence conventional bottle trapping surveys.

4.79 Great crested newts have been found to currently use ponds to the south of the Site but have been confirmed as not using ponds to the south-east. The ponds to the south support an estimated small population. While the Site is predominantly arable land or grazed grassland of low suitability for great crested newts, there is potential for the species to use on-site hedgerows and woodland margins for dispersal and foraging.

4.80 Great crested newts are a European Protected Species. Individual great crested newts and their habitats (aquatic and terrestrial) are protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). They are also Section 41 Species of Principal Importance. Although no evidence of breeding was recorded, the presence of females and males within Pond P2 indicate that this pond could be used by breeding great crested newts. Given the presence of potential breeding populations associated with ponds within a dispersible range of the Site, indicated to be of at least small population class size estimate, the local great crested newt population is considered to be important at the Local level.

Invertebrates

4.81 A total of 74 records of 31 invertebrate species were identified within the search area, including 30 species which are listed under the UK Biodiversity Action Plan (BAP) for Leicestershire. These include three butterfly species and 27 moth species. Those of potential relevance to the Site include, mottled rustic *Caradrina morpheus*, latticed heath *Chiasmia clathrate*, small phoenix *Ecliptopera silaceata*, rustic moth *Hoplodrina blanda*, rosy rustic *Hydraecia micacea*, dot moth *Melanchra persicariae*, shaded broad-bar *Scotopteryx chenopodiata*, cinnabar *Tyria jacobaeae* and wall butterfly *Lasiommata megera*. The Site is not located within an Important Invertebrate Area (IIA).

4.82 A total of 21 records of two crustacean species, including white-clawed crayfish *Austropotamobius pallipes* and signal crayfish *Pacifastacus leniusculus*, were identified within the search area, dating from 1999 to 2021. The closest record is of a white-clawed crayfish, c. 1.3km north-west from the Site, at Hill Hole Quarry LNR. Given the absence of suitable aquatic habitat on-site for crayfish, these species are considered to be likely absent.

4.83 A typical range of opportunities for invertebrates are available within the habitats on-site, with the hedgerows and scrub in particular likely to support a range of common and widespread species. There is no indication from the habitat types present that a notable assemblage is likely to be present. Invertebrates at the Site are therefore considered to be of ecological value at less than Local level and are scoped out of further assessment.

## Future Baseline

4.84 The Site is presently under active arable management, including the periodic cutting of field margins and hedgerows. Notwithstanding the potential rotation of crop-type, these management interventions maintain the on-site conditions in a relatively stable state. There is no known intention to cease this management, other than to

accommodate the proposed development should planning permission be granted. As such, the future baseline status of important ecological features is not anticipated to vary significantly from that at present.

## Summary of Ecological Features

4.85 Table 3 below summarises all important ecological features identified within the respective zones of influence, together with the geographic context of their importance:

**Table 3.** Summary of important ecological features and their geographic context

| Ecological Feature | Geographic Context of Importance and/or Protection Status |
|---|---|
| Woodland, Hedgerows and Trees | Local |
| Bats | County |
| Badger | Protected (Protection of Badgers Act 1992) |
| Amphibians | Local |

# 5.0 ASSESSMENT OF EFFECTS

The Proposed Development

5.1 Outline planning permission is sought for residential development at the Site. The following impact assessment is based on the Development Framework Plan prepared by CSA Environmental (CSA/2550/118) on behalf of Taylor Wimpey UK Limited.

5.2 The construction phase of the proposed development will comprise the following:

- Cessation of arable cultivation
- Cessation of cattle grazing
- Construction of a linear drainage outfall from the southern part of Field F1 (SUDS basin) to the southern boundary of Field F2 where it will connect with an existing ditch network
- Removal of sections of hedgerow from H1 (c. 20m) for vehicular and pedestrian accesses
- Construction of up to c. 135 residential dwellings
- Construction of associated gardens, parking, access infrastructure, a play area and pump station
- The establishment of Public Open Space (POS) to the south of the Site, including circular walking routes for new residents
- Establishment of Sustainable Urban Drainage Systems (SUDS) including construction of an outfall to discharge surface water, and large attenuation basins set within open space to the south of the developed area

5.3 The operational phase of the proposed development will comprise the following:

- Occupation of new residential dwellings
- Increase in human activity, including use of vehicles and presence of domestic pets
- Increased artificial lighting and anthropogenic noise

Assumptions

5.4 The following assumptions have been made during the assessment of potential effects of the proposed development on important ecological features. Although 'assumed' and therefore taken as part of the pre-mitigation scenario, these measures are referenced in the preceding sections where integral to the mitigation strategy.

5.5 In accordance with BS42020:2013, it is assumed that a Construction Environmental Management Plan (CEMP) will be secured by planning condition and prepared at the detailed design stage. In addition to the construction phase impact avoidance and mitigation measures identified in the following sections, the CEMP will detail standard

environmental control measures, including though not limited to the following:

- Implementation of strict protection measures for the root protection areas of retained trees and hedgerows, in accordance with BS5837:2012
- Standard best practice construction phase pollution prevention and control measures
- Sensitive working methods and timing to avoid direct impacts to nesting birds (generally vegetation removal outside nesting season of March through August)
- All working measures needed to comply with the terms of EPS derogation licensing specific to the development or works activity
- Updated ecological surveys, where necessary, to identify shifts in the baseline ecological condition (such as to support EPS derogation licence applications) in order that revised impact avoidance and mitigation measures can be adopted as required

5.6 In accordance with BS42020:2013, it is assumed that a Landscape and Ecology Management Plan (LEMP) will be secured by planning condition and prepared at the detailed design stage. The LEMP will set out measures for the establishment and long-term management of newly created and retained habitats to maximise benefits for biodiversity.

## Potential Impacts and Ecological Effects

Woodland and Hedgerows

5.7 The development proposals may result in impacts to woodland, such as where links are required to facilitate creation of the outfall from the southern side of Field F1, south-easterly through Field F2 where it will join with an existing ditch. Removal of trees in this area will comprise five semi-mature pine trees, three semi-mature field maples, as well as a small group of hazel within this woodland (see BHA_4237_AIA for full details). However, as identified within the Development Framework Plan, woodland areas are anticipated to be largely retained within a strong green infrastructure network on-site. Where woodland is retained, there is the potential for impacts to the root protection areas of these retained trees through construction impacts such as movement of machinery and groundworks.

5.8 In the absence of mitigation, construction works could result in the damage or destruction of retained woodland and there is potential for long-term deterioration of quality as a result of increased shading, improper management, soil compaction and development edge effects.

5.9 Generally, hedgerows on-site are species-poor features located around the periphery of the Site. It is anticipated that development will allow for

retention of the majority of hedgerows at the Site, save for the access along the western boundary. The eastern and southern boundaries of the Site are also designated as a potential Local Wildlife Site (Markfield, Groby, Ratby and Green Lane Hedgerows (pLWS), any loss of these features would result in loss of a potential local non-statutory designation. Nevertheless, the southern boundary is due to be retained, with a small section of the western boundary due to be lost, amounting to c. 10m. As such, any negative effects are likely to be significant at up to the Local level.

5.10 In the absence of sensitive working practices, construction works may also result in inadvertent damage to retained hedgerows, including those designated as a potential Local Wildlife Site. Improper management of these habitats may additionally result in their long-term deterioration. Overall, potential negative effects on woodland and hedgerows are predicted to be significant at the Local level.

Bats

5.11 The dominant land-use on-site will change from arable land to residential development. The area of grazed grassland to the south will be reverted to grassland or converted to an open ditch feature as part of the outfall construction. Although arable land is considered to offer limited foraging potential, proposals will alter the prey composition and availability for bats within the Site area.

5.12 Short breaches to Boundary B1 are proposed to facilitate access into and around the development. Activity surveys undertaken to inform proposals recorded low numbers common and widespread species using the western boundary of the site, where the main access is anticipated. This road corridor is subject to a high level of existing street lighting, including a streetlamp which currently illuminates the western boundary, thus reducing its suitability as a key dispersal corridor.

5.13 Overall bat activity at the Site was found to be low and ecologically important at the County level. The greatest bat activity levels were identified adjacent to the western boundary and southern boundaries, with distinct foraging activity by pipistrelles under the streetlamp on the eastern aspect.

5.14 The proposed development will result in an increase in artificial lighting, which may disturb bats using darker areas of the Site.

5.15 On the whole, the above effects are anticipated to be negative at up to the Local level, due to the common and widespread species found to be present during the survey work.

Badger

5.16 In the absence of mitigation, construction of the proposed development may risk direct impacts to any tunnels from the on-site sett

entrance along the eastern or southern boundary. As such, construction phase impacts may result in damage to tunnel extending into the developable area, or disturbance to badger using these features. Sett tunnels and chambers can extend underground away from entrances, where construction activity comes within 20m of a sett entrance consideration will need to be given to whether works are licensable and if setts need to be closed or reduced. In the absence of mitigation construction could result in the total or partial destruction of the setts, and the killing of any badgers in occupation.

5.17 Construction activity also has the further potential to result in the killing of individual badgers, who could become trapped in open excavations.

5.18 Badgers are known to persist in the area. As such, there is a risk that, in the absence of mitigation, construction activities could lead to the damage/destruction of setts or potential killing/injury of badger. Badgers are a common and widespread species and any impact to the population is likely to be significant at the less than Local level. However, without derogation, such impacts would constitute an offence under the Protection of Badgers Act 1992.

Amphibians

5.19 Great crested newts are known to persist in the area, with Ponds P1 and P2, located near to the proposed SUDS outfall route. An updated population class size assessment found a peak count one individual in Pond P2, with no great crested newts found in Pond P1. Pond P2 is considered to constitute a small population in line with published guidance (English Nature, 2001). As great crested newts have been recorded in very low numbers over several years of survey work in Pond P1, this feature is considered to support an occasional very small population.

5.20 While the Site itself is dominated by arable land and closely grazed grassland, which is likely to be unfavourable for great crested newt dispersal, the scrub and woodland to the south of Field F1 offer more suitable terrestrial opportunities for this species. A minor loss in this resource is proposed along the eastern boundary of Field F1, to allow for creation of the access road into the Site. Proposals are also for construction of an outfall from the SUDS basin, between Field F1 to the south of Field F2 where it connects with an existing ditch network. Construction of the outfall will result in the loss of grassland habitat, and minor permanent losses of suitable terrestrial habitats for this species to make way for development. Ponds P1 and P2 are located near to the southern end of the outfall, however the distance between the ponds and Field F1, where the majority of construction will be taking place is around c. 170m. Although Field F2 is currently closely grazed by cattle, in the absence of mitigation, the creation of the outfall near to Ponds P1 and P2 could result in the killing or injury of individual newts.

5.21 The outfall route will connect southwards to an existing ditch network, which is also connected downstream of Pond P1. In the absence of mitigation, improper drainage may result in deterioration or damage to Ponds P1. Pond P2 is isolated in the centre of a field and as such is not connected to the ditch. No impacts to Pond P2 as a result of the outfall are anticipated.

5.22 For the reasons set out, the number of individuals occurring within the Site are likely to be low, and their loss would be unlikely to undermine the viability of the local population and would be considered to be significant at no more than Local level. However, without derogation, such impacts would constitute an offence under the Conservation of Habitats and Species Regulations 2017, as amended.

### Mitigation by Design

5.23 It is an established principle (CIEEM, 2018) that, wherever possible, potential negative effects should be avoided through 'Mitigation by Design', as this gives greater certainty over deliverability, demonstrates a well-designed scheme and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).

Woodland, Hedgerows and Trees

5.24 Where any impacts to trees do occur this will be mitigated by new woodland and thicket planting to create new woodland and hedgerow features, as well as infill existing gaps to mitigate for any losses. This is particularly the case along the southern boundary adjacent to the retained woodland where strengthening vegetation is proposed to mitigate for the minor loss in trees to construct the outfall.

5.25 To mitigate for the minor loss of the western hedgerow, also designated as a pLWS, native species-rich planting will be provided elsewhere on-site to allow for sufficient compensatory habitat to be provided.

5.26 It is anticipated that the development will provide new hedgerow planting, for instance along the eastern boundary, which currently comprises fencing adjacent to scrub and woodland. Additional planting can be used to create a strong north-south hedgerow connection in this location.

Bats

5.27 It is anticipated that the development is likely to provide new tree, thicket and wildflower planting. Site boundaries will be strengthened by infill planting, promoting wider corridors for bat dispersal, including along the northern and eastern boundaries where there is currently little vegetation. New planting will comprise native species with benefit for wildlife, including bats, such as night-scented varieties.

5.28 New SUDS features will be delivered in the southern part of the Site and will provide new wet and dry features planted with suitable aquatic and wetland species. This in turn will promote diversity of habitats and therefore invertebrate prey abundance.

Badger

5.29 New planting at the Site will comprise areas of mixed scrub, which will offer foraging, sett building and dispersal habitat for badger. In addition to the retention of the majority of hedgerows and woodland, the new planting will strengthen green corridors across the Site.

Amphibians

5.30 The development will include open grassland and new soft landscaping at the south of Field F1, adjacent to the retained woodland, providing better connectivity and habitat opportunities for great crested newts than existing site conditions. New planting at the Site has been designed to protect the off-site great crested newt ponds by providing a buffer between the developable area and the known great crested newt ponds in the south. Landscaping proposals include the delivery of new hedgerow and thicket planting along the southern boundary of Field F1, offering dispersal opportunities around the development and into the wider area. New hedgerows have been shown around the SUDS basin to promote connecting habitat to and from this feature for great crested newts and other amphibians that may be present.

5.31 The SUDS basin will be engineered to support a permanently wet core and provide a net increase in aquatic habitat on-site. The location of the SUDS basin will offer a 'stepping stone' to habitats in the wider area, as well as connectivity with the adjacent woodland.

5.32 It's anticipated that the linear strip of land spanning south-easterly from Field F1 to the south of Field F2 will either be reinstated to grassland, or comprise an open ditch-like feature. It's anticipated that once complete and habitat is reinstated, the outfall area will provide a betterment to habitat currently present and as such any effects will be sufficiently mitigated.

5.33 As well as being reinstated to grassland, or comprising an open ditch feature, the outfall will connect to an existing ditch network to the east of Pond P1, thereby mitigating likely impacts relating to an increase in surface water travelling towards the known newt pond. By connecting downstream of the pond and using the outfall to slow and filter water along the route, any negative effects relating to drainage are considered to be adequately mitigated.

## Additional Mitigation

Woodland, Hedgerows and Trees

5.34 To prevent accidental damage to retained woodland and hedgerows on-site during construction, works will be undertaken in-line with BS 5837:2012 "Trees in relation to design, demolition and construction. Recommendations". The Root Protection Areas (RPAs) of trees and the designated buffer zone will be respected during preparation of detailed designs and protected during subsequent construction works.

5.35 Impacts may arise as a result of the proposals due to an increase in residents, children and young people. To avoid disturbance and vandalism to retained and newly created hedgerows and trees, the LEMP will include measures to protect these habitats and avoid impacts where possible. Production of the LEMP will be secured by a planning condition at the detailed design stage of each phase.

Bats

5.36 A sensitive lighting strategy will be designed such that light spill from streetlamps and on-site lighting will be minimised and directed away from retained or ecologically valuable habitats, including the existing hedgerows and Sutton Benger Brook. This will help to maintain dark corridors for bats, particularly the light sensitive greater and lesser horseshoe bats known to occasionally utilise the Site, and noctule bats commuting high in the sky over the Site, as well as other nocturnal wildlife.

Badger

5.37 To facilitate proposals, the outlier sett along the eastern boundary may need to be closed. Further to an update survey a Natural England development licence will be obtained to exclude badgers from this sett (and any other setts considered appropriate at this stage). Works will be subject to the terms set out within a Mitigation Strategy within which working methods will be specified in detail and agreed with Natural England.

5.38 During construction, precautionary impact avoidance measures will be adopted. These will be defined at the detailed design stage for each development phase within the CEMP. Such measures will include the use of mammal escape ladders in any open excavations left overnight.

Amphibians

5.39 In order to minimise the potential for direct impacts to individual newts, the initial site preparation works will need to be undertaken under a European Protected Species Derogation Licence. Hinckley and Bosworth Borough Council are part of Natural England's District Level Licensing (DLL) scheme and can hold a single licence covering all accepted developments partaking in the scheme. This takes financial

payments from developers to contribute to offsite strategic conservation measures for great crested newt. It is the intention that this development will seek to participate in the DLL scheme.

5.40 A CEMP will be prepared to set out pollution avoidance measures to be implemented during the construction phase of development in respect of the known great crested newt ponds off-site to the south.

## Residual Effects

5.41 Table 4 below summarises the assessment of potential impacts on each important ecological feature, proposed mitigation and the assessed residual effects.

**Table 4.** Summary of effects

| Important Ecological Feature | Potential Impacts and Effects | Avoidance & Mitigation Measures | Mechanism by which Measures are Secured | Residual Effects |
|---|---|---|---|---|
| Woodland and hedgerows | Removal of hedgerow sections for vehicular and pedestrian access | Strengthening of boundary vegetation Management of POS for biodiversity gain | LEMP secured through Planning Condition | No significant effect |
| Bats | Potential development edge effects from artificial lighting causing disturbance of foraging bats<br><br>Loss of foraging habitat<br><br>Minor breach in hedgerow and woodland habitat | New habitat creation, management of POS for biodiversity gain, sensitive lighting strategy | LEMP and Lighting Strategy secured through Planning Condition | No significant effect |
| Badger | Potential damage or destruction of setts | Precautionary badger survey; impact avoidance measures under CEMP, | CEMP secured through Planning Condition<br><br>Derogation licence if required secured by planning condition | No significant effect |
| Birds | Potential damage or destruction of nests and eggs | Sensitive timing of works / nest checks by ecologist | CEMP secured through Planning Condition | No significant effect |

| Important Ecological Feature | Potential Impacts and Effects | Avoidance & Mitigation Measures | Mechanism by which Measures are Secured | Residual Effects |
|---|---|---|---|---|
| | Loss of habitat for specialist farmland species | | | |
| Great crested newt | Potential loss of terrestrial habitat<br><br>Potential degradation of pond due to outfall construction<br><br>Killing and injury of individual news | New habitat creation including aquatic features, management of POS for biodiversity gain, derogation licence from Natural England | LEMP and CEMP secured through Planning Condition<br><br>Derogation licence if secured by planning condition | No significant effect |

5.42 Subject to the implementation of the above mitigation, no significant residual effects on any important ecological features are anticipated to result from the construction or operation of the proposed development.

## Cumulative Effects

5.43 Due to the scale and nature of the proposed development, a detailed assessment of potential cumulative effects has not been undertaken.

## Compensation

5.44 No significant residual negative effects on important ecological features are anticipated to result from the proposed development, following the inclusion of impact avoidance and mitigation measures described above. As such, no compensatory measures are proposed.

## Enhancement

5.45 The Development Framework Plan includes landscape planting enhancements which will make positive contributions to on-site biodiversity. Taylor Wimpey UK Limited have signed up to the Homes for Nature Scheme, which commits delivery of at least one bat or bird box per dwelling. Numbers below have been provided in line with this commitment.

5.46 New habitat creation will provide opportunities for species confirmed to be present on-site at baseline, such as nesting birds. In addition to these enhancements which are embedded into development proposals, a range of additional ecological enhancement measures will be delivered as part of the proposed development, as identified below. Further details will be set out in a LEMP at the detailed design stage, however as an indicative guide:

- Inclusion of **plant species of known wildlife value** within the landscaping scheme, including night-scented varieties to benefit bats.
- Provision of new bat roosting opportunities: At **least 65 no. bat boxes** will be erected on mature trees or new builds. These will be a purpose-built, durable and long-lasting variety such as available from *Schwegler* or *Habibat*. Where possible, these will be incorporated into the fabric of new builds.
- Provision of new bird nesting opportunities: At least **70 no. bird nesting boxes** will be provided in new/retained planting to benefit generalist bird species.
- Creation of log piles: Timber generated from tree clearance works at the Site will be used to make at least **five log piles** for wildlife benefit. These will be sited within boundary vegetation where they will be least disturbed. New material can be added as required following any future management works.
- Provision of hedgehog gaps: Hedgehogs have been scoped out of detailed assessment and no specific mitigation is proposed, however it is important that opportunities for hedgehogs to move through the landscape are preserved. Although not strictly an 'enhancement' measure, provision of **hedgehog-friendly gravel boards or equivalent**, providing a minimum 5 x 5 inch gap, will be used to maintain permeability for hedgehogs across the development and associated gardens. The number and location of hedgehog gaps will be determined at the detailed design stage and set out within the LEMP.

### Monitoring

5.47 No post-development monitoring of important ecological features is proposed. However, there will be ongoing monitoring of newly established and enhanced habitats as part of POS. This commitment will be made, and further detail provided, within the LEMP to be prepared at the detailed design stage.

# 6.0 CONCLUSIONS

6.1 In the absence of any mitigation measures, the proposed development would have the potential to result in negative effects significant at up to the Local level. However, with the implementation of some straightforward mitigation and precautionary measures as proposed here, the development is not anticipated to result in any significant residual negative effects on important ecological features.

6.2 The Development Framework Plan demonstrates the potential to deliver net benefits for wildlife in the form of additional habitats, with the opportunity to provide additional biodiversity enhancement measures alongside the new housing. A Biodiversity Net Gain Calculation has determined that the proposed development could secured a net gain.

6.3 The measures set out herein can be secured through appropriate conditions attached to any planning consent, and the development may therefore be delivered without harm to nature conservation interests. Specifically, it is anticipated that planning conditions would be used to secure:

- Construction Environmental Management Plan (CEMP): In addition to wider environmental controls and best practice construction management, the CEMP will set out construction-phase impact avoidance measures with respect to nesting birds, badgers and amphibians.
- Landscape and Ecology Management Plan (LEMP): The LEMP will detail the establishment and long term management of retained and newly created habitats to maximise benefits for wildlife. It will include a graphical Ecological Enhancement Plan, setting out the number, type and position of enhancement features.
- Lighting Strategy: A sensitive lighting strategy will accompany the detailed layout, ensuring that dark corridors are maintained, and minimising light spill to retained and newly created habitats.
- Mitigation Strategy: A mitigation strategy relating to great crested newts, and potentially badgers will be required.

6.4 Measures to minimise impacts and avoid significant negative effects on badger and great crested newts are further assured through the applicable legislative framework, which triggers statutory derogation licencing administered by Natural England.

6.5 Based on the successful implementation of avoidance, mitigation and enhancement measures set out herein, the scheme is considered to accord with all relevant nature conservation legislation, as well as with the provisions of Hinckley and Bosworth Borough Council.

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## Appendix A

Habitats Plan


N

- Site boundary
- Cereal crops (c1c)
- Modified grassland (g4)
- Bramble scrub (h3d)
- Developed land; sealed surface (u1b)
- Other broadleaved woodland (w1g)
- Native hedgerow (h2a)
- Native hedgerow with trees
- Field reference
- Hedgerow/boundary reference

0 50 100 m

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| | | | | | |
|---|---|---|---|---|---|
| Project | Land at Ratby Lane, Markfield | Date | May 2025 | Drawing No. | CSA/2550/124 |
| Drawing Title | Baseline Habitats Plan | Scale | Refer to scale | Rev | D |
| Client | Taylor Wimpey UK Limited | Drawn | GG | Checked | AP |

# Appendix B

Legislation and Planning Policy

1.1. The **Conservation of Habitats and Species Regulations 2017** (as amended) make prescriptions for the designation and protection of Sites of Community Importance ('European sites', i.e. Special Areas of Conservation and Special Protection Areas) and European Protected Species (EPS). The latter include all native bats, great crested newts, dormice, otters and certain reptiles, listed under Annex II of the Regulations. Following the UK's departure from the European Union, the provisions of the Regulations have been retained through enactment of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which came into force on 31 December 2020.

1.2. The **Wildlife and Countryside Act 1981** (as amended, principally by the Countryside and Rights of Way Act 2000) forms the basis for protection of statutory designated sites of national importance (e.g. Sites of Special Scientific Interest; SSSIs) and native species that are rare and vulnerable in a national context. Additionally, badgers are protected under the **Protection of Badgers Act 1992**.

1.3. The **Environment Act 2021** received Royal Assent in November 2021. Through an amendment to the Town and Country Planning Act 1990 the Environment Act will introduce a mandatory requirement for all planning permissions to be conditional upon the submission of a Biodiversity Gain Plan for approval by the Local Planning Authority. The Plan demonstrates a net gain of at least 10% in the biodiversity value of the development site. These provisions are coming into force from February 2024.

1.4. Section 40(1) of the **Natural Environment and Rural Communities (NERC) Act 2006** states that each public authority, "must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity." This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications, with particular regard to the Section 41 (S41) lists of 56 habitats and 943 species of principal importance. The UK Biodiversity Action Plan (BAP) has been superseded by the Biodiversity 2020 Strategy, however Local BAPs continue to influence biodiversity management and conservation effort, including through the spatial planning system, at the local scale.

1.5. The **National Planning Policy Framework (2023)** (NPPF) sets out the government planning policies for England and how they should be applied. With regards to ecology and biodiversity, Chapter 15: Conserving and Enhancing the Natural Environment, paragraph 180, states that the planning system and planning policies should minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

1.6. Paragraph 186 sets out the principles that local planning authorities should apply when determining planning applications:

- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
- Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest.
- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.
- 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.

1.7. Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular, the PPG promotes the delivery of measurable Biodiversity Net Gain through the creation and enhancement of habitats alongside development.

1.8. The **Government Circular 06/2005**, which is referred to within the NPPF, defines statutory nature conservation sites and protected species as a material consideration in the planning process.

1.9. Local planning policies of relevance to ecology, biodiversity and/or nature conservation have been set out in Table 1 below.

**Table 1.** Summary of regional and local planning policy relating to ecology

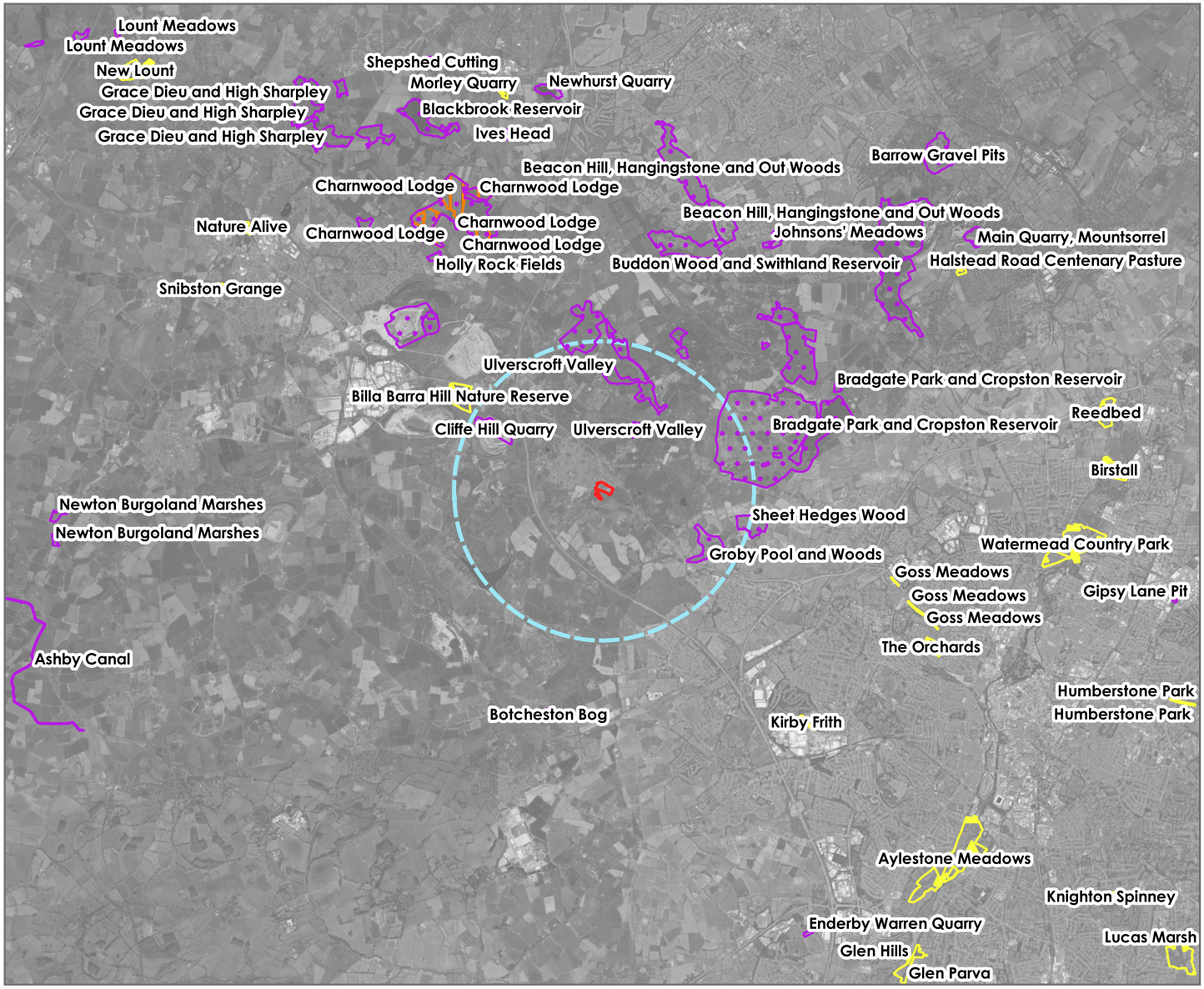
| Policy | Summary |
|---|---|
| **Hinckley & Bosworth Borough Council Local Development Framework Core Strategy (Adopted in December 2009)** | |
| **Spatial Objective 10: Natural Environment and Cultural Assets** | To deliver a linked network of green infrastructure, enhancing and protecting the borough's distinctive landscapes, woodlands, geology, archaeological heritage and biodiversity and encourage its understanding, appreciation, maintenance and development. |
| **Policy 20: Green Infrastructure** | The implementation of the Green Infrastructure Network as outlined on the Key Diagram is a key priority of the council. To assist delivery of this plan, the following strategic interventions will be supported:<br>• Public Access - Provide multi-user and traffic free access between Markfield and Groby. Options include routing around Groby Pool or to the south of the A50 via Little John and Martinshaw Wood.<br>• Promote the settlements within the National Forest (Markfield, Thornton, Stanton Under Bardon and Bagworth) and on the fringe (Groby, Ratby, Newbold Verdon, Desford, Barlestone and Nailstone) as 'gateway' villages to the National Forest.<br>• Transport Corridor Disturbance Mitigation - Plant trees alongside the A50 and A46 to the north and east of Groby and to the north and west of Markfield to reduce the visual and physical effects of the roads. |
| **Markfield Parish Neighbourhood Plan 2020-2039 (Submission Draft)** | |
| **Policy M4: Ecology and Biodiversity** | To be supported development proposals that cannot avoid harm to the biodiversity, or the geological significance of the following sites must include adequate mitigation, or as a last resort compensate for that harm:<br>• Billa Barra Hill Local Nature<br>• Reserve Hill Hole Quarry Nature Reserve<br>• Altar Stones Nature Reserve Local Wildlife Sites.<br>Proposals for biodiversity conservation or enhancement of the following types will be supported:<br>1. Management of woodlands, open grasslands and water features;<br>2. Restoration of drystone walls;<br>3. Planting of gaps in hedgerows to strengthen historic field patterns and management of over-mature hedges;<br>4. Tree planting to replace mature/veteran trees as they come to the end of their lives.<br>5. Maintenance of or creation of new stock fencing to prevent damage to the above |
| **Policy M5: Trees** | To be supported development proposals that will result in the unavoidable loss of trees or hedgerows must include replacement planting of native species in locations where they would have the opportunity to grow to maturity, increase canopy cover and contribute to the local ecosystem and the appearance of the area. |
| **Site Allocations and Development Management Policies DPD (Adopted 2016)** | |
| **DM6 Enhancement of Biodiversity and Geological Interest** | Development proposals must demonstrate how they conserve and enhance features of nature conservation and geological value including proposals for their long-term future management. Major developments in particular must include measures to deliver biodiversity gains through opportunities to restore, |

| Policy | Summary |
|---|---|
| | enhance and create valuable habitats, ecological networks and ecosystem services.<br>Proposals where the primary objective is to conserve or enhance biodiversity or geological interest will be permitted where they comply with other relevant policies in the plan.<br>On site features should be retained, buffered and managed favourably to maintain their ecological value, connectivity and functionality in the long-term. The removal or damage of such features shall only be acceptable where it can be demonstrated the proposal will result in no net loss of biodiversity and where the integrity of local ecological networks can be secured. If the harm cannot be prevented, adequately mitigated against or appropriate compensation measures provided, planning permission will be refused.<br>In addition to the above, where specific identified sites are to be affected the following will be taken into account: Internationally and Nationally Designated Sites International and Nationally Designated Sites will be safeguarded. Development which is likely to have any adverse impact on the notified features of a nationally designated site will not normally be permitted. In exceptional circumstances, a proposal may be found acceptable where it can be demonstrated that:<br>a) A suitable alternative site with a lesser impact than that proposed is not available; and<br>b) The on-site benefits of the proposal clearly outweigh the impacts on the notified features of the site and where applicable, the overall SSSI or habitat network; and<br>c) All appropriate mitigation measures have been addressed through the development management process; and<br>d) Development likely to result in a significant effect on internationally designated sites will be subject to assessment under the Habitats Regulations and will not be permitted unless adverse effects can be fully avoided, mitigated and/or compensated.<br>Irreplaceable Habitats Proposals which are likely to result in the loss or deterioration of an irreplaceable habitat would only be acceptable where:<br>e) The need and benefits of the development in that location clearly outweigh the loss; and,<br>f) It has been adequately demonstrated that the irreplaceable habitat cannot be retained with the proposed scheme; and<br>g) Appropriate compensation measures are provided on site wherever possible and off site where this not is feasible. Locally Important Sites Development proposals affecting locally important sites should always seek to contribute to their favourable management in the long term. Where a proposal is likely to result in harm to locally important sites (including habitats or species of principal importance for biodiversity), developers will be required to accord with the following sequential approach:<br>h) Firstly, seek an alternative site with a lesser impact than that proposed;<br>i) Secondly, and if the first is not possible, demonstrate mitigation measures can be taken on site;<br>j) Thirdly, and as a last resort, seek appropriate compensation measures, on site wherever possible and off site where this is not feasible. |

| Policy | Summary |
|---|---|
| **DM9 Safeguarding Natural and Semi-Natural Open Spaces** | All developments within or affecting Natural and Semi-Natural Open Spaces should seek to retain and enhance the accessibility of the space and its recreational value whilst ensuring the biodiversity and conservation value is also enhanced. Development within areas of Natural and Semi-Natural Open Space, as defined on the policies map, will only be considered appropriate where:<br>a) The proposal relates to the enhancement of the area for recreational purposes and only where this does not lead to the loss or damage of the area's biodiversity value; or<br>b) It relates to the enhancement of the area's biodiversity or conservation value; or<br>c) It would promote the establishment and enhancement of pedestrian footpaths and cycle ways; or<br>d) If within the National Forest, it contributes to the delivery of the National Forest Strategy in line with Core Strategy Policy 21; and<br>e) If within a Green Wedge, it protects its role and function in line with Core Strategy policies 6 and 9. |

## Appendix C

Desk Study Information

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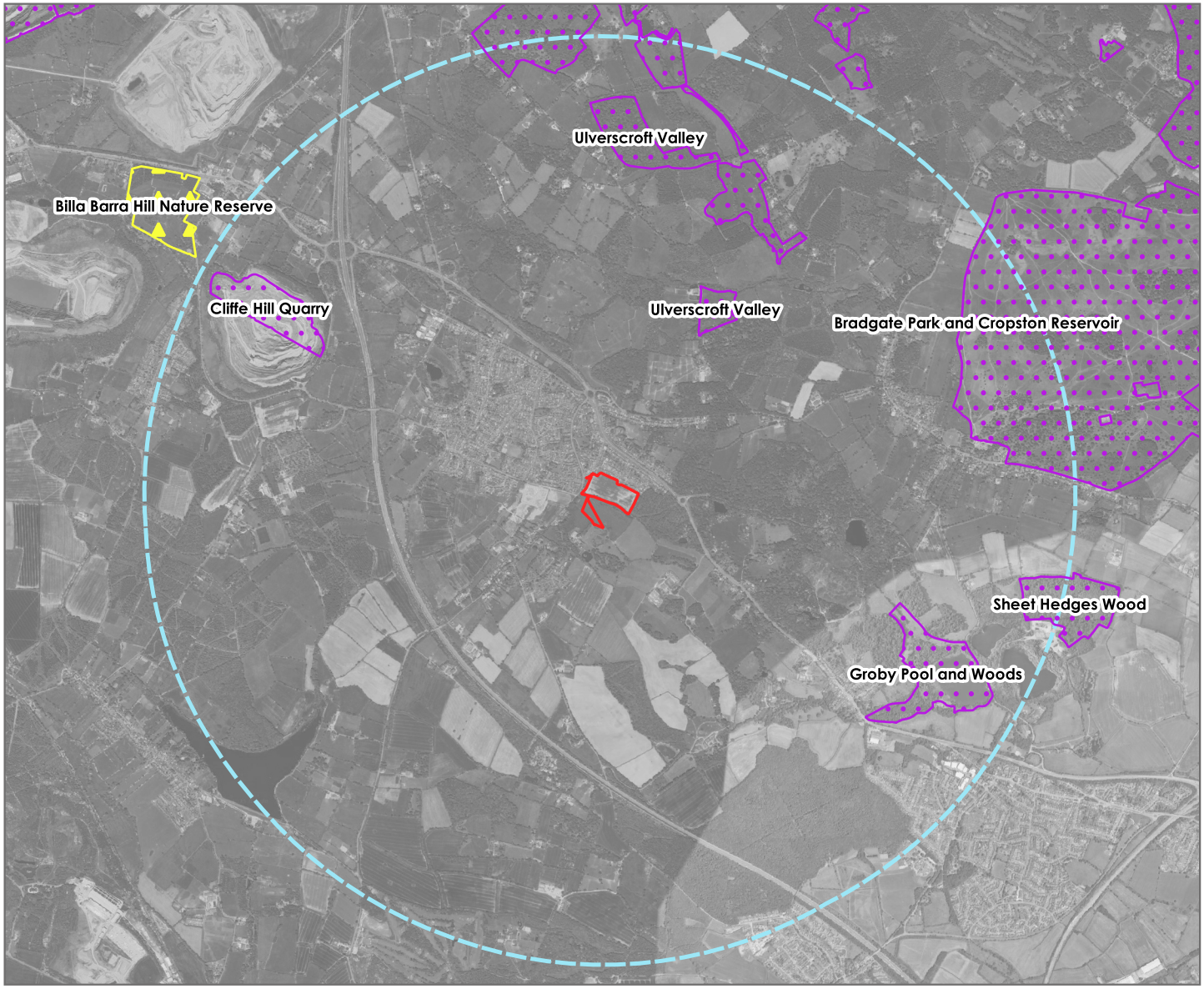
| | | | | | |
|---|---|---|---|---|---|
| Project | Land at Ratby Lane, Markfield | Date | May 2025 | Drawing No. | CSA/2550/131 |
| Drawing Title | 10km Designated Site Search | Scale | Refer to scale | Rev | A |
| Client | Taylor Wimpey UK Limited | Drawn | GG | Checked | AP |




N

Site boundary
3km buffer
Site of Special Scientific Interest (SSSI)
National Nature Reserve (NNR)
Local Nature Reserve (LNR)

0 1 2 km

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| | | | | | |
|---|---|---|---|---|---|
| Project | Land at Ratby Lane, Markfield | Date | May 2025 | Drawing No. | CSA/2550/132 |
| Drawing Title | 3km Designated Site Search | Scale | Refer to scale | Rev | A |
| Client | Taylor Wimpey UK Limited | Drawn | GG | Checked | AP |

## Appendix D

Photographs

Photograph 1. Arable Field F1 and Boundary B2.

Photograph 2. Grassland margin along Boundary B2.

Photograph 3. Treeline and grassland margin along Boundary B3.

Photograph 4. Arable Field F1 and Boundary B5 and B1.

Photograph 5. Woodland corridor W1 and public footpath.

Photograph 6. Grassland Field F2 and offsite pond (Pond P1).

# Appendix E

Habitats and Flora Species List

Habitats and Flora Species List

| | |
|---|---|
| **Site name** | 2250 Land at Ratby Lane, Markfield |
| **Survey date and surveyor** | 12/04/2021 & 17/04/2023 Alex Perry ACIEEM |

| **Scientific name** | **Common name** | **Habitat Type** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F1 | F2 | B1 | B2 | B3 | B4 | B5 | B6 | W1 |
| **Herb species** | | | | | | | | | | |
| *Anthriscus sylvestris* | Cow parsley | X | | | | | | | | |
| *Cerastium sp.* | Mouse-ear | | X | | | | | | | |
| *Chamerion angustifolium* | Rosebay willowherb | X | | | | | | | | |
| *Cirsium vulgare* | Spear thistle | X | | | | | | | | |
| *Ficaria verna* | Lesser celandine | X | | | | | | | | |
| *Galium aparine* | Cleavers | X | | | | | | | | |
| *Heracleum sphondylium* | Hogweed | X | | | | | | | | |
| *Jacobaea vulgaris* | Common ragwort | X | | | | | | | | |
| *Narcissus sp.* | Daffodil | X | | | | | | | | |
| *Pleioblasus sp.* | Bamboo | | | | | | | X | | |
| *Ranunculus repens* | Creeping buttercup | X | | | | | | | | |
| *Rumex sp.* | Dock | X | X | | | | | | | |
| *Taraxacum officinale agg.* | Dandelion | X | X | | | | | | | |
| *Urtica dioica* | Common nettle | X | | | | | | | | |
| *Veronica persica* | Common field-speedwell | X | | | | | | | | |
| **Grasses** | | | | | | | | | | |
| *Dactylis glomerata* | Cock's-foot | X | | | | | | | | |
| *Holcus lanatus* | Yorkshire fog | X | | | | | | | | |
| *Lolium perenne* | Perennial rye grass | | X | | | | | | | |
| **Woody species** | | | | | | | | | | |
| ***Coniferous*** | | | | | | | | | | |
| *Cupressus × leylandii* | Leylandii | | | | | | | X | | |
| ***Broadleaved*** | | | | | | | | | | |
| Acer campestre | Field maple | | | | | | | | | X |
| Acer pseudoplatanus | Sycamore | | | | | | | | | X |
| *Clematis sp.* | Clematis | X | | | | | | | | |
| *Cornus sp.* | Dogwood | | | | | | | X | | X |
| *Corylus avellana* | Hazel | | | | | | X | | | |
| *Crataegus monogyna* | Hawthorn | | | X | X | | X | X | X | X |
| *Fagus sylvatica* | Beech | | | | | | | X | | |
| *Fraxinus excelsior* | Ash | | | | | | | | X | X |
| *Forsythia sp.* | Forsythia | | | | | | X | | | |
| *Hedera helix* | Ivy | | | | X | | X | | X | |
| *Ilex aquifolium* | Holly | | | | X | | X | X | X | X |
| *Ligustrum sp.* | Privet | | | | | | | X | X | |
| *Prunus sp.* | Prunus | | | | | | | | | X |
| *Prunus sp.* | Laurel | | | | | | | X | | |
| *Prunus spinosa* | Blackthorn | | | | | X | | | X | |
| *Quercus sp.* | Oak | | | X | | | X | X | | X |
| *Rubus fruticosus agg.* | Bramble | | | | X | X | X | X | X | X |
| *Sambucus nigra* | Elder | | | X | X | X | X | | | |

# Appendix F

Evaluation & Assessment Methods

1.1. Ecological features are evaluated and assessed in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) 2018 Guidelines for Ecological Impact Assessment (EcIA). For clarity, the evaluation and assessment process adopted within this EcIA is set out below.

Establishing Potentially Important Ecological Features

1.2. Ecological features are assessed where they are considered to be important, and where they may be impacted by a proposed development. A feature may be considered important for a variety of reasons, such as quality, extent, rarity and/or statutory protection. Table 1 below sets out a non-exhaustive list of ecological features that are typically considered, along with key examples:

**Table 1.** Potentially important ecological features (adapted from CIEEM 2018)

| **Potentially Important Ecological Features** | **Typical examples** |
|---|---|
| Statutory designated sites under international conventions or European Legislation | Wetlands of International Importance (Ramsar sites), Special Areas of Conservation (SAC), Special Protection Areas (SPA) |
| Statutory designated sites under national legislation | Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR, Local Nature Reserves (LNR) |
| Non-statutory, locally designated wildlife sites | Local Wildlife Sites (LWS), County Wildlife Sites (CWSs), Sites of Importance for Nature Conservation (SINCs) |
| National biodiversity lists | Habitats or Species of Principal Importance for the Conservation of Biodiversity (Section 41, NERC Act 2006), Ancient Woodland Inventory |
| Local biodiversity lists | Local Biodiversity Action Plan (BAP) priority species or habitats |
| Red Listed / Rare Species | Species of conservation concern, Red Data Book (RDB) species, Birds of Conservation Concern, nationally rare and nationally scarce species |
| Legally Protected Species | E.g. species listed under Sch.5 of the W&C Act 1981, or Sch.2 of the Hag. Regs. 2017 |
| Legally Controlled Species | E.g. species listed under Sch.9 of the W&C Act 1981 |

1.3. It should also be noted that the social, community, economic or multi-functional importance attributed to ecological features are not assessed as they fall outwith the scope of this assessment.

Establishing Likely Zone of Influence

1.4. The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects as a result of the project and associated activities. The project's zone of influence varies across different ecological features, which have different vulnerabilities and

sensitivities. For the purposes of this assessment, the following zones were considered:

- International statutory nature conservation designations up to 10km from the Site
- National and local statutory nature conservation designations up to 3km from the Site
- Non-statutory locally designated wildlife sites up to 1km from the Site

1.5. These arbitrary distances are considered sufficient for identifying the nature conservation designations which could be subject to significant effects. However, it is acknowledged that in certain circumstances effects beyond these distances are possible and should be considered as far as is reasonably practicable to do so.

1.6. For other ecological features, such as habitats and species, the appropriate zone of influence is described and justified as appropriate within the report, depending on their respective sensitivity to an environmental change.

1.7. The results of professionally accredited or published scientific studies have been used and referenced, where available, to establish the spatial and temporal limits of the biophysical changes likely to be caused by specific activities, and to justify decisions about the zone of influence.

Geographic Context and Significance Criteria

1.8. The importance of ecological features, as well as the significance of any likely impacts and their effects, are considered here within a defined geographic context:

- International
- National
- Regional
- County
- Local

1.9. The size, conservation status and the quality of features are all relevant in determining their importance and assigning this to the geographic scale. Where the importance of a feature is considered to fall below the Local scale, they are scoped out of detailed assessment.

1.10. Impacts and their effects are taken to be significant where they support or undermine biodiversity conservation objectives, with the scale of significance defined according to the above geographic context. Where an impact or effect is unlikely to be perceptible at a Local scale, this is taken to be not significant.

Characterising Ecological Impacts and their Effects

1.11. Where likely significant ecological impacts and effects are identified in connection with the proposed project, these are considered and described with reference to the following characteristics (where this is helpful in accurately portraying the ecological effect and determining the scale of significance):

- Positive or negative (i.e. does the anticipated change accord with nature conservation policies and objectives?)
- Extent (i.e. the spatial area over which the impact or effect may occur)
- Magnitude (i.e. the quantified size, amount, intensity or volume)
- Duration (i.e. the timeframe over which the impact or effect may occur, in both human and ecological terms)
- Frequency and timing (i.e. the number of times an activity occurs, where this is likely to influence the effect)
- Reversibility (i.e. is spontaneous recovery possible or may the effect be counteracted by mitigation?)

**Appendix G**

Bat Survey Report

## 1.0 Introduction

1.1 This appendix has been produced by CSA Environmental on behalf of Taylor Wimpey UK Limited. It sets out the methods and results of bat activity surveys undertaken at Land at Ratby Lane, Markfield (hereafter referred to as 'the Site'), where residential development is proposed.

## 2.0 Legislation

2.1 All British bat species are legally protected under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to:

- Deliberately capture, injure, or kill a bat
- Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young, or which significantly affects the local distribution or abundance of the species
- Damage or destroy a breeding site or resting place used by bats

2.2 All bats and their roosts in the UK were previously fully protected under the Wildlife & Countryside Act 1981 (as amended). Amendments to the Act have removed most provisions as they relate to bats, however it remains an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection

2.3 It is important to note that bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Regulations, the offence of damaging or destroying a breeding site or resting place is subject to 'strict liability', i.e. an offence is commented irrespective of whether the causal act was deliberate or otherwise.

2.4 Where development is proposed that would result in an offence under the Regulations, a European Protected Species (EPS) statutory derogation licence (often termed 'EPS Mitigation Licence') will need to be secured from Natural England to permit an act that would otherwise be unlawful. Such a licence can only be granted following receipt of planning permission with all relevant conditions discharged, and where it has been demonstrated that specific statutory derogation tests have been met.

## 3.0 Methods

3.1 The following survey methods, design, data analysis and interpretation have been undertaken with due consideration of the Bat Conservation Trust (BCT) guidelines 4th edition (Collins, 2023).

Daytime Bat Walkover

3.2 A Daytime Bat Walkover (DBW) was undertaken on 18 March 2025 by Alex Perry ACIEEM (Bat Class Survey Licence WML-CL18, Registration Number 2017-32919-CLS-CLS) in fine and dry weather conditions. The aim of the survey is to observe, assess and record any habitats suitable for bats to roost, commute and forage on-site and within the surrounding area.

3.3 As part of the survey, surveyors identified any structures, trees or other features that could be suitable for bats to roost in, and habitats that could be suitable for bats to use to commute, forage or swarm. Assigning potential to roosting features is discussed in the relevant sections below.

3.4 Following the survey, suitability of commuting and dispersal habitats are assigned under the following categories:

3.5 *Either:*

- ***High*** – Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
- ***Moderate*** – Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
- ***Low*** – Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
- ***Negligible*** – No obvious habitat features on-site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
- ***None*** – No habitat features on-site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flightlines, or generate/shelter insect populations available to foraging bats).

Ground Level Tree Assessment (GLTA)

3.6 A GLTA is a detailed inspection of the exterior of a tree from the ground to look for features that bats could use for roosting, Potential Roost Features (PRFs).

3.7 All trees on-site were inspected from ground level, using binoculars, high-powered torches, ladder and endoscope as appropriate. The survey was completed on 03 June 2021 and updated on 17 April 2023 and 18 March 2025. Each survey was completed by Alex Perry ACIEEM (Bat Class Survey Licence WML-CL18, Registration Number 2017-32919-CLS-CLS). A description of each tree was made, including the species, height, diameter at 1.5m from ground level and condition.

3.8 The aim of this inspection was to look for PRFs from ground level and give a preliminary description of each (such as type of PRF, height, size and location on tree). Surveyors also recorded direct (i.e. actual roosting bats) or indirect evidence of roosting bats (e.g. droppings), as well as the nature and number of features with 'potential' to support roosting bats. This includes consideration of trees to support bats whilst in hibernation.

3.9 Following the GLTA, each tree was assigned one of the following categories:

- ***PRF*** – A tree with at least one PRF.
- ***FAR*** – Further assessment required to establish if PRFs are present in the tree.
- ***None*** – Either no PRFs in the tree or highly unlikely to be any.

*Assessing 'Potential' of Trees to Support Roosting Bats*

3.10 Each PRF was assigned to one of the following categories:

- ***PRF-I*** – Tree with a Potential Roost Feature (PRF) that is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surroundings.
- ***PRF-M*** – PRF is suitable for multiple bats and may therefore be used by a maternity colony.

3.11 The categories above are intended to provide initial guidance on whether further inspections are necessary to prove presence or likely absence of roosting bats, rather than to assign importance to such features.

3.12 The potential of a tree to support roosting bats is often influenced by its age, thermal stability, lighting and levels of human activity. Furthermore, the proximity to foraging habitat - particularly woodland, parkland and wetland- as well as the presence of navigational routes (e.g. hedgerows, treelines and watercourses) influence both the potential for bats to roost, as well as the species which may roost. Professional

judgement is therefore applied, based upon known factors which effect the potential of features to support roosting bats, insofar as determining the need or scope of further surveys or inspections.

Activity Surveys

*Night-time Bat Walkover*

3.13 Seasonal transect surveys were originally undertaken in 2021 and then updated in May, July and September 2023. Following a change in guidance night-time bat walkover surveys were completed in May 2025, and are due to be undertaken in July and September 2025 to allow surveys undertaken in spring, summer and autumn. On each occasion, surveyors were stationed at specific points within the Site prior to sunset, and stationed on potential flight lines close to potential roost sources such as groups of buildings or woodland. Locations were predetermined by the results of the Daytime Bat Walkover (see Figure 1).

3.14 Each survey was walked at a moderate and consistent speed with qualitative observations of bat behaviour made by the surveyor. Each survey commenced at sunset (British Summer Time), continuing for the following two hours. The surveys were led by Georgina Gard, in suitable weather conditions (see Table 1).

3.15 Bat calls were recorded using Elekon Batlogger M detectors. This detector automatically records ultrasonic signals with a one second delay between recordings. Recordings of bat contacts were subsequently analysed using BatExplorer software, with sonograms reviewed to confirm bat identification to genera, or where possible, species level.

3.16 Each of the recorded files, which contain a variable number of call 'pulses', was designated a 'bat contact'. At the point of contact, each sound file is assigned a GPS location.

3.17 Night-time bat walkover surveys are intended to gather data on the spatial distribution of bat activity across the Site, identifying areas of relative importance for bats, including key flight lines. In addition, direct observation of bats allows for qualitative assessments of how bats use the Site to be made complementing quantitative data collected through remote monitoring.

3.18 On each occasion, surveyors were stationed at specific points within the Site prior to sunset, and stationed on potential flight lines close to potential roost sources such as groups of buildings or woodland. Locations were predetermined by the results of the Daytime Bat Walkover (see Figure 1).


**Figure 1.** Stationed surveyor locations (SSL) during the Night-time Bat Walkover Surveys undertaken in May, July and September 2024.

**Table 1.** Night-time Bat Walkover survey timings and weather conditions

| Survey Date | Sunset Time | Start Time | End Time | Temp. (°C) | | Cloud Cover (oktas) | | Wind (Beaufort Scale) | | Precipitation |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Start | End | Start | End | Start | End | |
| 12/05/25 | 20:50 | 20:50 | 22:50 | 20 | 16 | 0 | 0 | 1 | 0 | None |

3.19 Surveyors remained in position to count, observe behaviour and make acoustic recordings of commuting (or foraging) bats for up to an hour after sunset. Any observations of bat activity such as feeding or commuting behaviour was noted, or identification of key flightlines (such as height, direction of travel, numbers of bats and response to weather or other features on-site). Alternatively, if streams of commuting bats were noted elsewhere on-site, surveyors used back-tracking methods to move towards a roost, responding to live observations. Surveyors were

equipped with BatLogger M bat detectors to allow any bat contacts to be recorded.

3.20 As part of the stationed observation, whilst surveyors are positioned across the Site at the start of the survey, vantage point observations were undertaken, including notes on early emerging/high-flying bats such as noctule. Notes made on behaviour include flight height, numbers of bats and direction of travel.

3.21 Following 30 minutes of stationed observations, surveyors walked a single transect route, which aimed to cover all accessible areas, features and habitats at the Site. Each transect route was repeated at least once during each survey to minimise temporal bias and walked at a moderate and consistent speed with qualitative observations of bat behaviour made by the surveyor.

*Automated/Static Surveys*

3.22 Two Wildlife Acoustics Songmeter (SM4/SMmini) detectors were deployed seasonally in 2021, and these surveys were then updated in May, July and September 2023 to provide six update data-sets. Following a change in bat survey guidance, the suitability of the on-site habitats were assessed as 'moderate' condition, and therefore monthly static monitoring surveys have been/are due to be completed between April and October 2025. The locations of these Monitoring Locations (ML) are shown on Figure 1 below.


**Figure 2.** The locations of each Monitoring Location (ML) surveyed during remote monitoring surveys in May, July and September 2021 and 2023, and April to October 2025

3.23 The detectors were setup to automatically record ultrasonic signals for the period from half an hour before sunset to half an hour after sunrise each night, with each monitoring period spanning at least five consecutive nights.

3.24 Static detectors were deployed across the Site to provide a representative sample of all habitats in the survey area that could be impacted by the proposals.

3.25 Weather conditions were obtained for each night surveyed using historic weather data from the World Weather Online website, with weather observations taken from the nearest weather station in Leicester Forest East. The five nights showing the most optimal weather conditions (in terms of temperature, precipitation and wind speed, see Table 2) were taken forward for analysis.

3.26 Recordings are triggered when a bat echolocation call is detected and will contain a variable number of call 'pulses'. Each file containing call pulses by a bat(s) is designated as a 'bat contact' for each species present. The maximum recording duration is 15 seconds after which time a new recording file, and thus a new bat contact, is generated if echolocation calls are still being detected. This means that periods of prolonged bat activity near a detector is represented as multiple bat contacts, rather than a single one.

Analysis of Data

*Call Analysis*

3.27 Bat calls were recorded using Elekon Batlogger M detectors. This detector automatically records ultrasonic signals with a one second delay between recordings. Recordings of bat contacts were subsequently analysed using BatExplorerPro software, with sonograms reviewed to confirm bat identification to genera, or where possible, species level.

3.28 Each of the recorded files, which contain a variable number of call 'pulses', was designated a 'bat contact'. At the point of contact, each sound file is assigned a GPS location.

3.29 For analysis of data recorded during static monitoring, quantitative analysis of bat activity was then undertaken by calculating the average bat contacts per hour on each night monitored, for each species.

3.30 Bat activity can show considerable inter-night variability and is dependent on a number of variables, including temperature, wind, and seasonality, amongst others. To account for this variability the median values for the average hourly bat contacts per night are reported, rather than a mean value which would misrepresent the average activity.

*Limitations*

3.31 It should be noted that the findings described herein for remote monitoring surveys are based on the bat activity recorded at the location immediate to each detector, and therefore only describe localised activity at the Site. Where possible, in line with best practice guidance static detectors have been placed c. 1.5m from any nearby vegetation however due to the potential for disturbance from the public, this has not always been possible. Where needed to be located within hedgerows, surrounding foliage has been removed to prevent interference from vegetation covering the microphone.

3.32 In addition, comparisons drawn on the number of detector activations by different species/genera can only give an indication of relative species abundance at the Site, as detectability varies between species.

3.33 It is acknowledged that the quantum of bat contacts recorded during a survey may not give a true reflection of the abundance of bats using the Site. For example, a single bat foraging close to a detector may trigger several hundred activations in the course of one night. However, this activity level does provide a proxy for the level of use by bats, and therefore its relative importance.

3.34 Activity surveys should typically be spread out to cover spring (April/May), summer (June/July/August) and autumn (September/October) seasons. Due to planning submission timescales, April and May static monitoring has been completed, and a May night-time bat walkover. The remaining survey work will be completed and this report updated accordingly. To provide a meaningful assessment of bat activity, results from survey work carried out in 2021 and 2023 are also included here-in.

## 4.0 Results

Daytime Bat Walkover

4.1 The Site is bounded my woodland on the southern boundary, with a number of mature trees, and vegetation on the remaining features. The daytime bat walkover survey has identified the Site as 'moderate' suitability for roosting and foraging bats due to the intact boundaries and connectivity to woodland to the east.

Ground Level Tree Assessment (GLTA)

4.2 All trees and tree groups on-site were included in the assessment. Tree numbers are consistent with those used within the Tree Survey Report (report reference: BHA_4237_TS).

4.3 Generally, trees on-site are small and restricted to within hedgerow features. Only trees within the site boundary were assessed, resulting in one tree, Tree T12 (a mature oak), identified as a PRF-I, due to minor roosting features identified.

Activity Surveys

*Night-time Bat Walkover*

4.4 During the 2023 survey work, two species were recorded during the night-time bat walkover survey, comprising common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*. The majority of contacts were recorded along the western boundary where single bats were often recorded foraging under an adjacent streetlight along Ratby Lane, and along the southern boundary where foraging was observed along the woodland edge.

4.5 In the 2025 updates, only common pipistrelle was recorded during the May night-time bat walkover survey, with activity dominant along eastern and western boundaries.

4.6 The number of bat contacts recorded for each species in the 2025 survey are summarised in Table 2 below. The locations of each bat contact and the overall distribution of activity across the Site are illustrated in Figures 3 and 4.

**Table 2**. Summary of bat contacts recorded during night-time bat walkover surveys

| **Month** | **Common pipistrelle** |
|---|---|
| May | 39 |
| Total | 39 |
| **Percentage of Total (%)** | 100% |


**Figure 3**. Locations of bat contacts recorded across all night-time bat walkover surveys in 2025

4.7 Figure 4 below provides an indicative illustration of 'hotspots' in bat activity recorded during the night-time bat walkover surveys undertaken at the Site. No key commuting lines were observed, but foraging by a common and soprano pipistrelle bats along the eastern and western boundaries were seen during the night-time bat walkover survey, as is

reflected within the results. Both areas of the Site are also more sheltered due to topography.

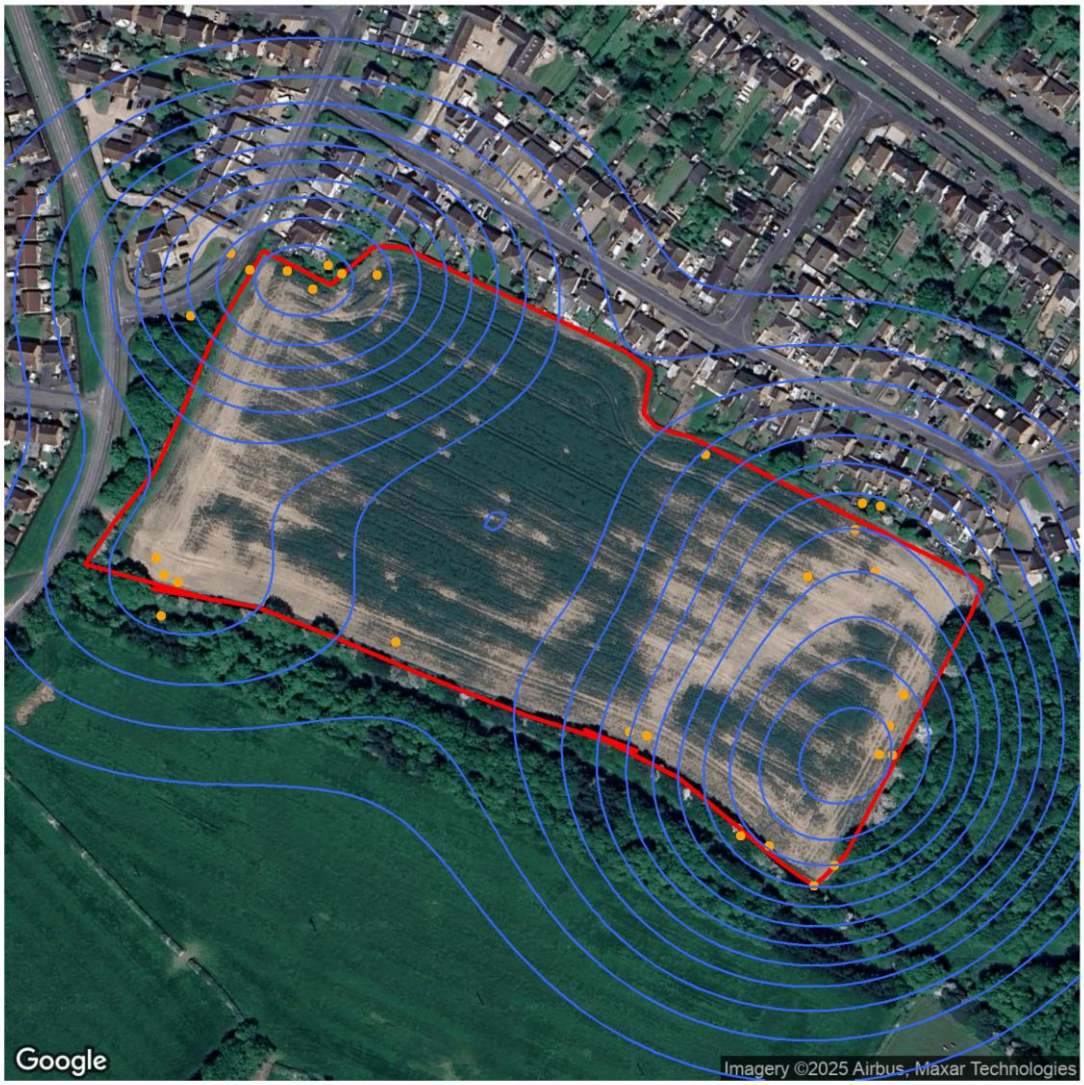


**Figure 4.** Indicative 'Utilisation Distribution' (UD) of all bat species/genera at the Site estimated from all transect data combined. The UD illustrates the relative probability of a bat in flight being present at a given point at the Site, with higher/central contours having a greater probability, and lower/peripheral contours having less probability.

*Static/Automated Monitoring*

4.8 The weather conditions experienced during the ten nights where data was analysed are provided in Table 3 below.

**Table 3.** Overnight weather conditions during remote monitoring

| Survey Month | Dates Sampled | Temp. (°C) | | Cloud Cover (%) | | Wind (km/h) | | Precipitation |
|---|---|---|---|---|---|---|---|---|
| | | Min | Max | Min | Max | Min | Max | |
| April | 03/04/25 | 5 | 10 | 11 | 25 | 10 | 13 | None |
| April | 04/04/25 | 4 | 7 | 0 | 87 | 21 | 24 | None |
| April | 05/04/25 | 2 | 5 | 4 | 32 | 11 | 15 | None |
| April | 06/04/25 | 1 | 5 | 1 | 4 | 4 | 10 | None |
| April | 07/04/25 | 2 | 7 | 1 | 96 | 3 | 6 | None |
| May | 08/05/25 | 3 | 9 | 10 | 27 | 6 | 11 | None |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| May | 09/05/25 | 6 | 12 | 3 | 9 | 5 | 9 | None |
| May | 10/05/25 | 8 | 14 | 0 | 8 | 6 | 11 | None |
| May | 11/05/25 | 11 | 15 | 26 | 87 | 6 | 13 | None |
| May | 12/05/25 | 8 | 15 | 7 | 16 | 12 | 13 | None |

4.9 The total number of bat contacts recorded across all monitoring locations and monitoring periods for each bat species/genera are provided in Figure 5 below.

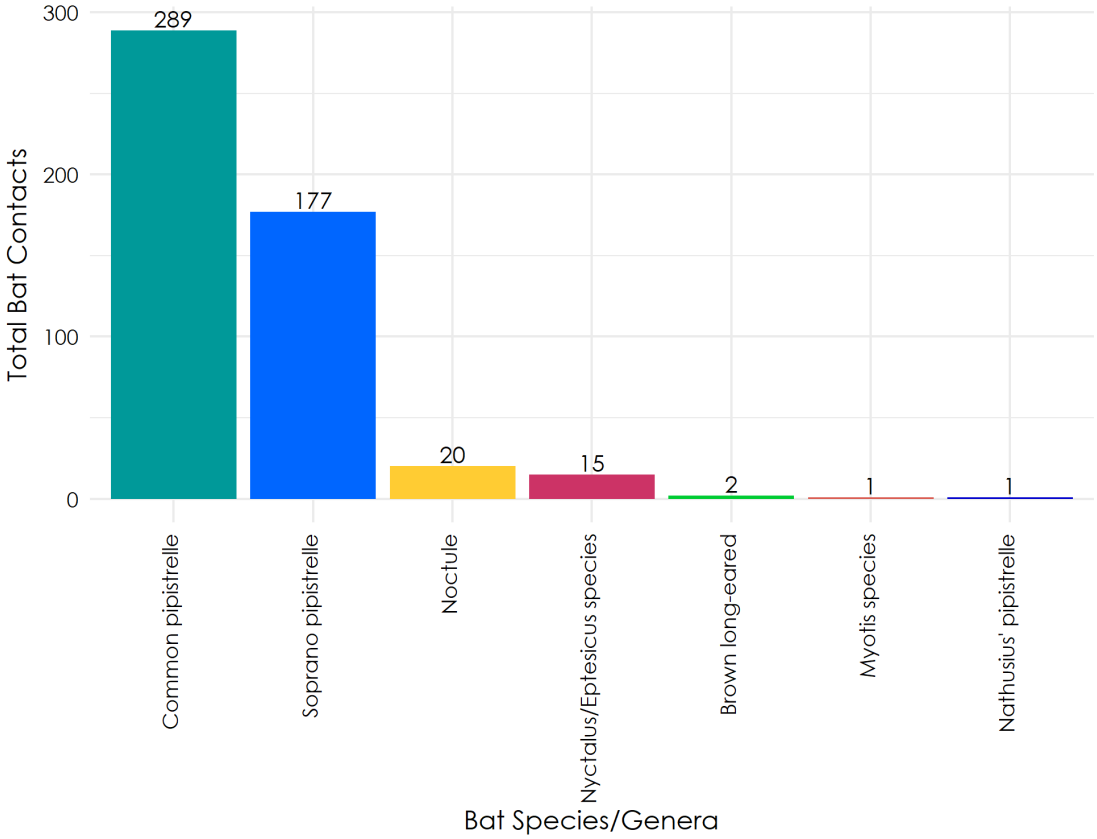


**Figure 5.** Total bat contacts by species/genera recorded across all remote monitoring periods and monitoring locations

4.10 Higher pass numbers of common pipistrelle and soprano pipistrelle bat were recorded, with low levels of all other species. Bat activity appears to be marginally higher at ML1 than ML2, but this may be on account known foraging area for common pipistrelle under the streetlight.

4.11 Figure 6 below shows the variance in nightly activity levels for each of these bat species recorded on-site. More detailed data describing Figure 6 are provided in Table 4. The activity data in Figure 6 is presented as boxplots for each bat species, which show the inter-night variability in bat activity across the 10 nights monitored. The median value (middle line of the boxplot) is taken as the typical level of activity for that species on-site at the point monitored. The length of each coloured boxplot is the interquartile range which shows the variance in nightly activity around the median value. The ends of each whisker line define the minimum and maximum nightly activity values recorded at the

monitoring location. Outlying values are nightly activity levels that are greatly different when compared to the distribution of the remaining nightly activity levels. Outliers are illustrated as black points away from the boxplot. While important to note, these outliers do not represent the bat activity more commonly found at the Site for the species in question.

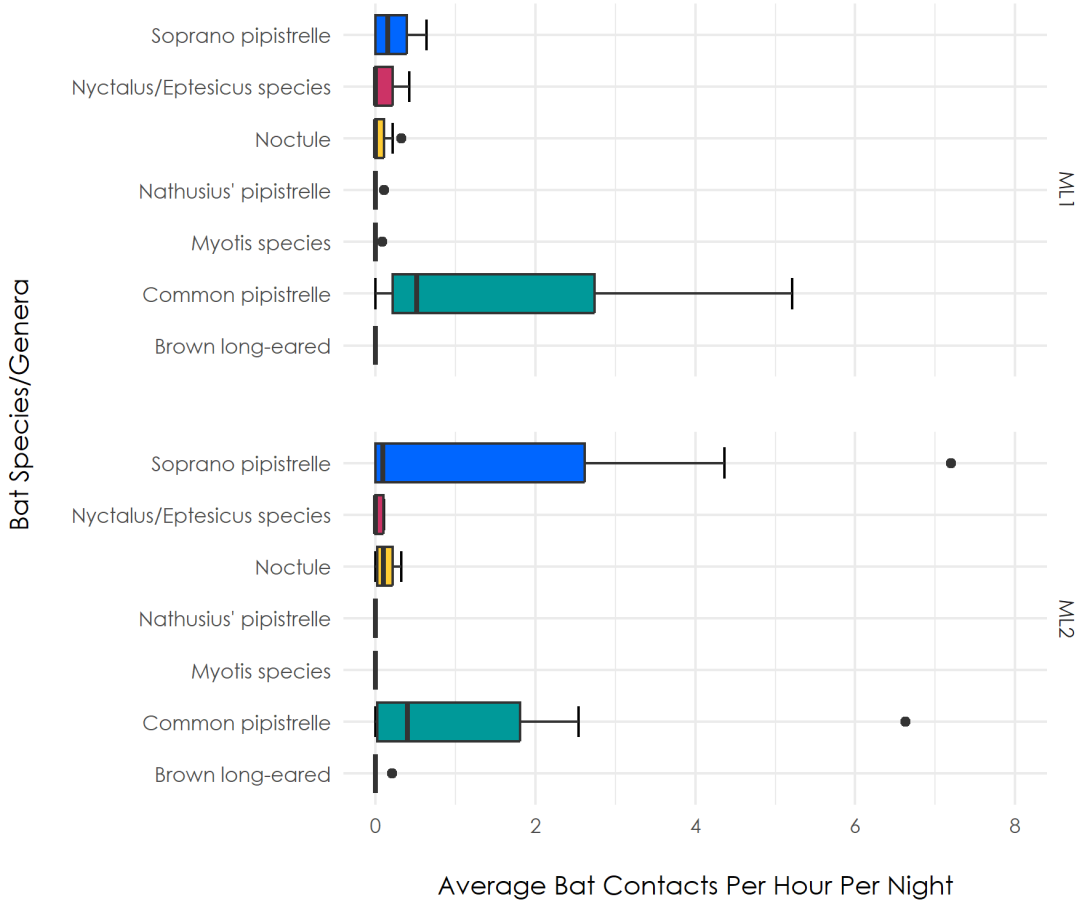


**Figure 6.** Average bat contacts per hour per night for each bat species/genera recorded across all remote monitoring

4.12 The data shows a marginally higher average number of common pipistrelle passes at ML1 than ML2. The diversity of species is similar at both Monitoring Locations, however a single Nathusius' pipistrelle was recorded at ML1, and two brown long-eared contacts at ML2.

**Table 4.** Average bat contacts per hour per night recorded during remote monitoring surveys

| ML | Species | Average bat contacts per hour per night | | | | Total bat contacts | Number of nights monitored |
|---|---|---|---|---|---|---|---|
| | | Min | Max | Med | IQ range | | |
| ML1 | Brown long-eared | 0 | 0.000 | 0.000 | 0.000 | 0 | 10 |
| ML1 | Common pipistrelle | 0 | 5.213 | 0.515 | 2.524 | 161 | 10 |
| ML1 | Myotis species | 0 | 0.085 | 0.000 | 0.000 | 1 | 10 |
| ML1 | Nathusius' pipistrelle | 0 | 0.106 | 0.000 | 0.000 | 1 | 10 |
| ML1 | Noctule | 0 | 0.319 | 0.000 | 0.105 | 7 | 10 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ML1 | Nyctalus/Eptesicus species | 0 | 0.423 | 0.000 | 0.212 | 11 | 10 |
| ML1 | Soprano pipistrelle | 0 | 0.635 | 0.149 | 0.394 | 20 | 10 |
| ML2 | Brown long-eared | 0 | 0.211 | 0.000 | 0.000 | 2 | 10 |
| ML2 | Common pipistrelle | 0 | 6.632 | 0.400 | 1.790 | 128 | 10 |
| ML2 | Myotis species | 0 | 0.000 | 0.000 | 0.000 | 0 | 10 |
| ML2 | Nathusius' pipistrelle | 0 | 0.000 | 0.000 | 0.000 | 0 | 10 |
| ML2 | Noctule | 0 | 0.319 | 0.096 | 0.191 | 13 | 10 |
| ML2 | Nyctalus/Eptesicus species | 0 | 0.107 | 0.000 | 0.101 | 4 | 10 |
| ML2 | Soprano pipistrelle | 0 | 7.196 | 0.095 | 2.616 | 157 | 10 |

## Summary

4.13 A total of one species were recorded during the night-time bat walkover survey, comprising common pipistrelle. The majority of contacts were recorded along the southern and western boundaries.

4.14 The static monitoring surveys resulted in a greater diversity of bats, but the vast majority of recording were that of common pipistrelle. At least seven bat species were recorded during the static monitoring surveys, including low numbers of Nathusius' pipistrelle.

4.15 As the mature oak, which was found to comprise a PRF-I is due to be retained and protected within an area of open space and therefore no additional survey work has been deemed necessary

4.16 Scheme design should seek to retain vegetation at the Site as flightlines for bats, including the woodland corridor to the south. New and retained vegetation should be maintained as dark corridors through delivery of a sensitive lighting strategy, where new native species planting can be used to buffer potential light spill from the new development and create new foraging opportunities for bats.

**Appendix H**

Badger Survey Report

## 1.0 Introduction

1.1 This appendix has been produced by CSA Environmental on behalf of Taylor Wimpey UK Limited. It sets out the methods and results of badger surveys undertaken at Land at Ratby Lane, Markfield (hereafter referred to as 'the Site'), where residential development is proposed.

## 2.0 Legislation

2.1 Badgers and their setts are protected under the Protection of Badgers Act 1992 which, in part, makes it an offence to:

- Kill, injure or take a badger
- Destroy or damage a badger sett or any part of it
- Obstruct access to, or any entrance of, a badger sett
- Disturb a badger whilst it is occupying a sett

2.2 Impacts to badgers and their setts should be avoided in the first instance by retaining setts and implementing an appropriate buffer distance to limit disturbance. Where this is not possible, a Natural England licensing system exists to permit certain works that would otherwise be illegal. This can include direct or direct impacts which may result in any of the above offences. Where a licence has been granted, permitted impacts to a badger sett can only be carried out between the months of July and November (inclusive) and following an agreed method statement.

## 3.0 Methods

3.1 An initial badger survey was conducted on 10 August 2021 by Alex Perry ACIEEM and Lorna Gwilliam, with a subsequent update surveys completed on 24 May 2023 by Tom Richards ACIEEM and 18 March 2025 by Alex Perry ACIEEM and Georgina Gard, using standard survey methods, searching the Site and immediately adjacent areas for field signs of badger and mapping any present such as:

- Feeding signs such as snuffle entrances made during foraging
- Hairs caught on vegetation or fences
- Latrines, usually positioned on territorial boundaries
- Foraging tracks through vegetation or under fences
- Badger setts

3.2 When badger setts are found the number of entrances are recorded as well as the level of usage. Recording this information gives an indication of the type of sett by categorising it according to the criteria listed in Table 1 below (Harris *et al*. 1989, Cresswell *et al*. 1990, Wilson *et al*. 1997).

**Table 1.** Description of sett types and badger activity

| **Sett Type** |
|---|
| **Main Setts** - These usually have a large number of entrances with large spoil heaps, and the sett generally looks well used. There will be well-used paths to and from the sett and between sett entrances. Although normally the breeding sett is in continuous use, it is possible to find a main sett that has become disused due to excessive digging or some other reason; it should be recorded as a disused main sett. In the first survey, the average size of an active main sett was twelve entrances (including all categories of use). |
| **Annexe setts** - They are often close to a main sett, usually less than 150 metres away, and are usually connected to the main sett by one or more obvious well-worn paths. They usually have several entrances, but may not be in use all the time even if the main sett is very active. In the first survey the average size was five entrances (including all categories of use). |
| **Subsidiary setts** - These often only have a few; four (including all categories of use) was the average number in the first survey. They are usually at least 50 metres from a main sett, and do not have an obvious path connecting with another sett. They are not continuously active. |
| **Outlying setts** - These usually have only one or two entrances, often have little spoil outside the entrance, have no obvious path connecting with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as badger setts by the shape of the tunnel (not the actual entrance entrance), which is usually at least 250mm in diameter, and is rounded or a flattened oval shape. Fox and rabbit tunnels are smaller and often taller than broad. |
| **Entrance Type** |
| **Well used entrances** - These are clear of any debris or vegetation, are obviously in regular use, and may or may not have been excavated recently. |
| **Partially used entrances** - These are not in regular use and have debris such as leaves and twigs in the entrance, or have moss and/or other plants growing in or around the entrance. Partially used entrances could be in regular use after a minimal amount of clearance. |
| **Disused entrances** - These have not been in use for some time, are partially or completely blocked, and could not be used without a considerable amount of clearance. If the entrance has been disused for some time, all that may be visible is a depression in the ground where the entrance used to be, and the remains of the spoil heap, which may be covered in moss or plants. |

*Limitations*

4.0 There were no specific limitations to the badger survey, which was conducted at an optimum time of year and in good conditions.

## 5.0 Results

5.1 During the initial badger survey in 2021, a single sett opening was discovered along the eastern boundary of the Site. No other evidence of badger was recorded. The same single entrance was confirmed to still be present during the update badger survey in 2023, although there were no recent signs of activity, and the hole was deemed to be disused. No other evidence was recorded during the 2023 badger survey.

5.2 The 2025 update badger survey found an increase in badger activity along the southern and eastern boundaries of the Site since previous survey work was undertaken.

5.3 Snuffle holes and fresh spoil were observed along a section of the southern boundary with well-used mammal paths leading to a partially used sett entrance within the woodland corridor. A search of this area found four fresh latrines in close proximity to the sett entrance.

5.4 Several well-used mammal paths were identified along the length of the eastern boundary, and two sett openings were noted. The first sett entrance was located further south along the boundary (adjacent to the Site) and was determined to be partially used, with some fresh spoil present. The second sett opening was located further north along the eastern boundary (on-site) and appeared to be well-used with a large amount of fresh spoil present. Two fresh latrines were found between the two sett entrances with mammal paths going further north-east and south-west into the adjacent scrub/woodland.

5.5 Badger activity identified at the Site during the 2025 update survey is shown on the Badger Survey Plan (CSA/2550/130) at the end of this report.

## 6.0 Summary

6.1 Badger activity was identified along the southern and eastern boundaries of the Site, with a total of three sett entrances observed alongside fresh latrines, spoil and mammal paths. One of the sett openings (along the eastern boundary) is on-site, whilst the remaining two are directly adjacent to the Site boundary within woodland/scrub habitat.

6.2 As badger activity can change rapidly over time, the results within this report are considered to be valid for 12 months. After this period survey work will need to be updated.


N

Site boundary

Sett entrance (approximate location)

Latrine (approximate location)

Target note:
TN1. Badger paw prints

0 50 100 m

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| | | | |
|---|---|---|---|
| Project | Land at Ratby Lane, Markfield | Date May 2025 | Drawing No. CSA/2550/130 |
| Drawing Title | Badger Survey Plan | Scale Refer to scale | Rev A |
| Client | Taylor Wimpey UK Limited | Drawn GG | Checked AP |

**Appendix I**

Great Crested Newt Survey Report

## 1.0 Introduction

1.1 This appendix has been produced by CSA Environmental on behalf of Taylor Wimpey UK Limited. It sets out the methods and results of great crested newt *Triturus cristatus* surveys undertaken at Land at Ratby Lane, Markfield (hereafter referred to as 'the Site'), where residential development is proposed.

## 2.0 Legislation

2.1 Great crested newts *Triturus cristatus* are legally protected as European Protected Species (EPS) under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to:

- Deliberately capture, injure, kill or capture a great crested newt
- Deliberately disturb great crested newts, impairing their ability to survive, breed, reproduce or rear/nurture their young
- Damage or destroy a breeding site or resting place used by a great crested newt

2.2 Great crested newts are also fully protected under the Wildlife & Countryside Act 1981 (as amended), making it an offence to:

- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place of shelter or protection
- Intentionally or recklessly obstruct access to any structure or place of shelter or protection

2.3 Disturbance of great crested newts is covered by both the 2017 Regulations and the 1981 Act. Disturbance that impairs survival or successful reproduction would be covered by the Regulations, while less significant acts of disturbance may only be covered by the Act.

2.4 It is important to note that great crested newts and their habitats (such as breeding ponds) are protected throughout the year, regardless of whether or not newts are present at the time.

2.5 Great crested newts are also listed as a species of principal importance for the conservation of biodiversity in England, under Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006. The S41 species list is used to guide decision-makers, including planning authorities, in implementing their duty under Section 40 of the NERC Act to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

Licensing

2.6 Where development is proposed that would result in an offence under the Habitats and Species Regulations, a statutory derogation licence may be granted by Natural England to permit an act that would

otherwise be unlawful. To obtain an EPS licence for development, it must be demonstrated that the purpose of the act to be licensed is for:

- "preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment" (Regulation 55(2)(e))

2.7 In addition, Natural England will not grant an EPS licence unless they are satisfied that:

- "There is no satisfactory alternative" (Regulation 55(9)(a))
- "The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" (Regulation 55(9)(b))

## 3.0 Methods

Desk Study

3.1 In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken in August 2021 and updated in March 2023 to identify ponds within 500m of the Site which may have potential to support breeding great crested newts, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography. Typically, 500m is the generally accepted maximum dispersal range of this species, with great crested newt most likely to use terrestrial habitat within 250m of breeding ponds.

Habitat Suitability Index (HSI) Assessment

3.2 Where ponds were situated within an 500m radius and connected to the Site by traversable terrestrial habitats, access permission was requested to undertake a Habitat Suitability Index (HSI) assessment, using the standard approach set out by Oldham *et al*. (2000). These assessments were undertaken on 29 April 2021 by Alex Perry ACIEEM (Natural England Class Licence WML-CL08 – Registration Number 2015-18118-CLS-CLS) and updated on 17 April 2023 and 03 April 2025 by Becca King (Natural England Class Licence WML-CL08 – Registration Number 2024-11823-CL08-GCN)

Presence/Likely Absence Surveys

3.3 Ponds P1 and P2 have been surveyed in 2021, 2023 and 2025, using the following survey methods: torch surveying, bottle-trapping, egg searching and netting; in accordance with the Great Crested Newt Mitigation Guidelines (2001). Terrestrial habitats were also searched for great crested newts, e.g. under logs, rocks and debris. The surveys were led by Alex Perry.

3.4 On each of the survey visits bottle traps were set out during the evening, just before dusk. These traps were then checked early the following

morning for the presence of great crested newts and the traps were subsequently removed. Bottle traps were set out at regular intervals along accessible stretches of bank. During each survey, nighttime air temperatures were recorded, in line with current guidelines.

3.5 Torchlight searches were carried out after dark on each survey visit with one million candlepower Clulite™ torches. Any amphibians seen were recorded. On each survey visit the vegetation was searched for the presence of great crested newt eggs.

3.6 Suitable weather conditions are those nights when the night-time air temperature is 5°C or warmer, with little or no wind. All surveys were conducted during such conditions, as shown in Table 1 below. Results of the 2025 surveys are shown below, with full results for 2021, 2023 and 2025 available at the end of this report.

**Table 1**: Survey conditions during 2025 surveys

| | | Pond 1 | | Pond 2 | |
|---|---|---|---|---|---|
| **Date** | **Air temp (°C)** | **Veg cover (0-5)** | **Turbidity (0-5)** | **Veg cover (0-5)** | **Turbidity (0-5)** |
| 03/04/2025 | 6 | 2 | 1 | 4 | 1 |
| 10/04/2025 | 14 | 1 | 3 | 5 | 2 |
| 22/04/2025 | 13 | 1 | 1 | 5 | 2 |
| 29/04/2025 | 12 | 1 | 2 | 5 | 2 |
| 14/04/2025 | 15 | 3 | 1 | 5 | 5 |

Environmental DNA (eDNA) Sampling

3.7 Water samples were collected from Ponds P4 and P5 on 18 April 2023 by Alex Perry ACIEEM (Natural England Class Licence WML-CL08 – Registration Number 2015-18118-CLS-CLS) and Kate Kibble (Natural England Class Licence WML-CL08 – Registration Number 2015-16710-CLS-CLS) and Georgina Gard on 23 April 2025, following the recommended procedure. Appropriate biosecurity measures were taken to avoid cross contamination of great crested newt eDNA. Subsequently the samples were sent to ADAS for DNA analysis. This method has been shown to be a highly effective in detecting the presence of great crested newts (Biggs *et al*., 2014).

*Limitations*

3.8 Access was not provided to survey Pond P6. As this pond is located on the opposing side of the A50 trunk road, it is not considered a significant limitation not to have surveyed this pond as the road likely provides a barrier to great crested newt dispersal.

3.9 The surveys were conducted at an optimum time of year and in good conditions. The fields around Pond P2 were frequently used by cattle, which were moved before each survey to ensure surveyor safety.

3.10 The 2025 update survey found that Pond P2 had become dominated by duckweed *Lemna minor,* and it was not possible to conduct a detailed torchlit search due to the heavy vegetation cover.

3.11 A long period of dry and warm weather caused the significant reduction in size of Ponds P1 and P2. As such, bottle trapping was not possible at Pond P1, and only five traps could be deployed in Pond P2.Refuge searches were conducted in addition at both of these ponds during the fifth survey.

## 4.0 Results

4.1 Results should be read in conjunction with the Pond Plan shown at the end of this report.

Desk Study

4.2 The desktop search for ponds and subsequent site visits identified six waterbodies within 500m of the Site. These ponds are identified on the Pond Plan (CSA/2550/123). Pond P6 is located c. 420m east of the Site, though the intervening A50 trunk road separates the two and is likely to form a barrier to dispersal. Pond P6 was therefore ruled out of further investigation.

4.3 The data search provided 27 records of great crested newt, two of which are located within ponds almost adjacent to the south-west of the Site (Ponds P1 and P2 in Appendix C), dating from 2014, comprising a peak count of one and eight individuals respectively.

Habitat Suitability Index (HSI) Assessment

4.4 The results of the HSI assessments are provided in Table 2 below. Pond 3 comprises a large, ornamental lake with major waterfowl impact, whilst Pond 5 comprises a large, suspected fishing lake. As such, these two ponds were found to support 'Poor' suitability for great crested newts and as such were ruled out of further survey work. Detailed results of the HSI assessment can be found at the end of this report.

4.5 As the Site boundary spans south-easterly for creation of the outfall, the distances for Ponds P1 to P3 reflect the distance from the southernmost part of the outfall.

**Table 2.** HSI Results

| Pond Number | Distance from Site | HSI Index Value | Category |
|---|---|---|---|
| 1 | c. 5m south-west | 0.681 | Average |
| 2 | c. 100m south-east | 0.654 | Average |

| | | | |
|---|---|---|---|
| 3 | c. 200m south-west | 0.459 | Poor |
| 4 | c. 335m east | 0.657 | Average |
| 5 | c. 390m east | 0.419 | Poor |

Environmental DNA (eDNA) Sampling

4.6 Water samples for both Ponds P4 and P5 returned negative eDNA results, confirming the likely absence of great crested newts in 2023 and 2025. Full results can be found at the end of this report.

Presence/Likely Absence Surveys

*2021 surveys*

4.7 As Pond P1 is known to have historically supported great crested newts (based on data search information), this pond was subject to six surveys comprising four presence / likely absence surveys in the first instance, followed by two population class estimate surveys. During the surveys, no great crested newts were recorded in Pond P1.

4.8 During surveys at Pond P2, two female great crested newts were recorded in bottle traps during the second survey, with two females recorded by torching during the fourth survey. On this basis, a further two population class estimate surveys were completed. During the fifth survey a single great crested newt was found in the bottle traps. On this basis the pond is considered to support a peak count of two great crested newts.

4.9 Four surveys of Pond P4 recorded no great crested newts or smooth newts within this pond and great crested newts were considered to be likely absent from Pond P4 in 2021.

*2023 surveys*

4.10 As above, due to previous recorded presence of great crested newt in 2014, Pond P1 was subject to six surveys, despite none being recorded during the initial four visits. A single male great crested newt was recorded in the bottle traps during the sixth and final survey. No great crested newt eggs, efts or larvae were recorded in any of the ponds during the six surveys of Pond P1. As such, the peak count at Pond P1 is considered to be one, comprising a small population size class assessment.

4.11 A peak count of eight smooth newts *Lissotriton vulgaris* were recorded in Pond P1 during the survey work.

4.12 A peak count of two female great crested newts were recorded during the first four surveys at Pond P2 and as such, this pond was subject to two further surveys to establish population count. During the sixth and final survey, a peak count of six females and two male great crested newts

were recorded within bottle traps. As such this pond is considered to have a peak count of eight great crested newts, comprising a small population class size estimate.

*2025 surveys*

4.13 Five surveys of Pond P1 recorded no great crested newts. One male smooth newt was recorded during the first torchlit survey with two smooth/palmate newts (not sexed) recorded during the third torchlit survey. As such, this pond is considered to have a peak count of one smooth newt and two smooth/palmate newts. No great crested newt eggs, efts or larvae were recorded in Pond P1 during any of the five surveys conducted to date.

4.14 Due to the presence of duckweed in Pond P2, no torchlit search for great crested newts was limited. However, one male great crested newt was recorded within a bottle trap in the first survey, with another male found during the third survey and a female recorded in the fourth survey. This pond is considered to have a peak count of two great crested newt, comprising a small population class estimate. During the first survey two male and two female smooth newts were also recorded within bottle traps, providing a peak count of four smooth newt for this pond. No great crested newt eggs, efts or larvae were recorded in Pond P2.

4.15 Full survey results can be seen within the table at the end of this report.

## 5.0 Summary

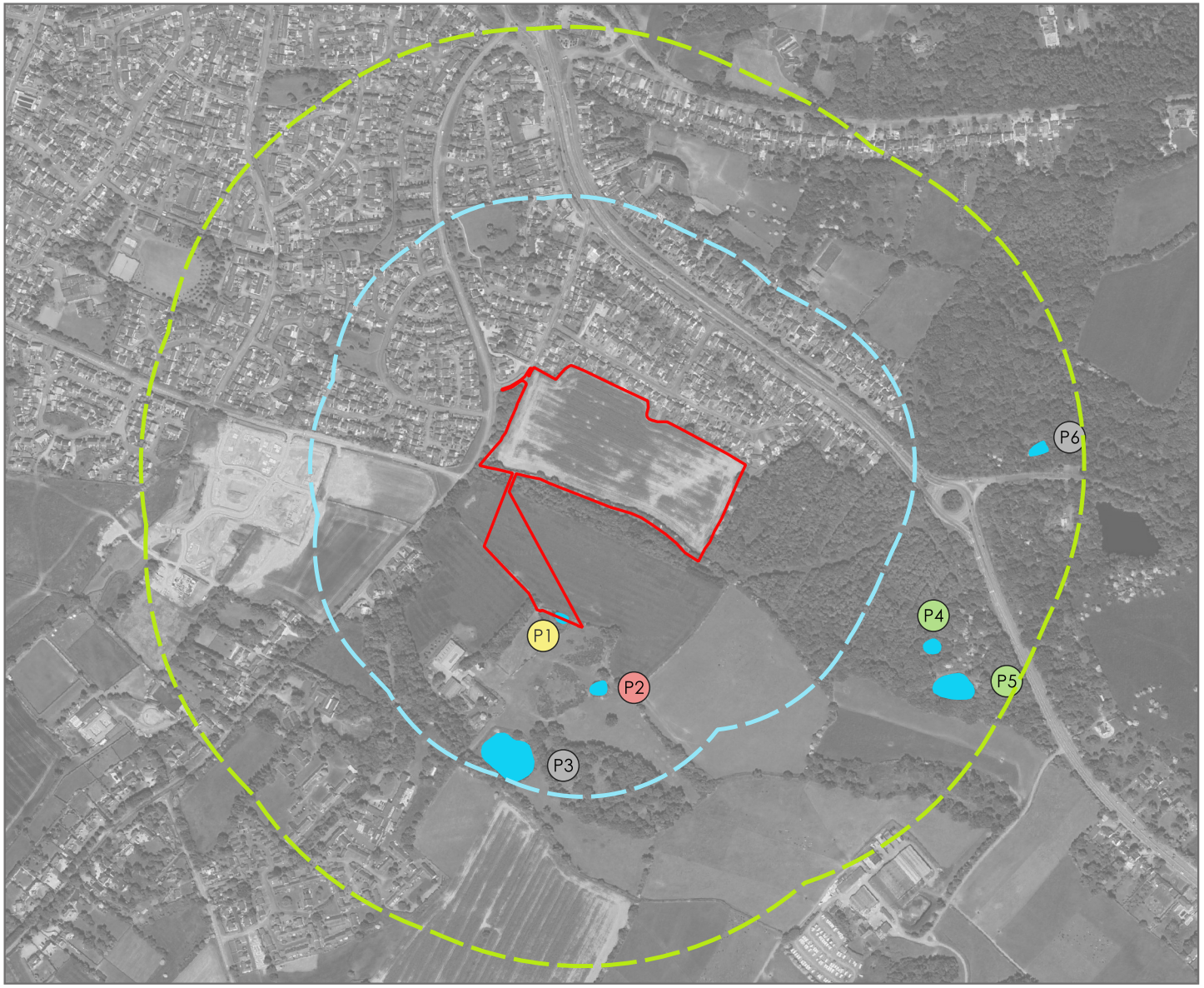
5.1 Negative eDNA results from Ponds P4 and P5 confirmed the continued likely absence of great crested newts from within these waterbodies.

5.2 The 2023 surveys confirmed the presence of great crested newts within both Ponds P1 and P2. Presence / likely absence surveys and population estimate surveys resulted in peak counts of a single great crested newt in Pond P1 and eight great crested newts in Pond P2. As such, it was considered that both ponds support small populations of great crested newt.

5.3 Update surveys conducted in 2025 found no great crested newts within Pond P1 during the first four presence / likely absence surveys. Great crested newts are confirmed to be present within Pond P2 with presence / likely absence surveys resulting in a peak count of one great crested newt.

5.4 Great crested newts comprise a European Protected Species and as such individuals and their habitat are protected by law. As this species is known to persist near to the Site, a derogation licence from Natural England will be required for works to proceed.

5.5 The Site is located within the Hinckley and Bosworth district of Leicestershire, which is included within Natural England District Level Licensing scheme. Developers have the potential to join this scheme which in turn will provide the licence required for works to proceed.




N

- Site Boundary
- 250m buffer
- 500m buffer
- Ponds
- Pond reference
- Confirmed presence of great crested newt
- Great crested newts likely absent
- Negative eDNA results
- Ponds ruled out following pond scoping/no access

0 250 500 m

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| | | | | | |
|---|---|---|---|---|---|
| Project | Land at Ratby Lane, Markfield | Date | May 2025 | Drawing No. | CSA/2550/123 |
| Drawing Title | Pond Plan | Scale | Refer to scale | Rev | B |
| Client | Taylor Wimpey UK Limited | Drawn | GG | Checked | AP |

| Habitat Suitability Factors: | | Pond Number | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| **Map location** | Category | Zone A | Zone A | Zone A | Zone A | Zone A |
| | SI Value | 1 | 1 | 1 | 1 | 1 |
| **Pond area in $m^2$** | Category | 125m2 | 200m2 | >2000m2 | 350m2 | >2000m2 |
| | SI Value | 0.25 | 0.4 | | 0.7 | |
| **Permanence / Desiccation** | Category | Rarely Dries | Rarely Dries | Never Dries | Never Dries | Never Dries |
| | SI Value | 1 | 1 | 0.9 | 0.9 | 0.9 |
| **Water quality** | Category | Moderate | Moderate | Moderate | Moderate | Poor |
| | SI Value | 0.67 | 0.67 | 0.67 | 0.67 | 0.33 |
| **Percentage perimeter shade to at least 1m from shore** | Category | 66-70% | 96-100% | 0-60% | 91-95% | 0-60% |
| | SI Value | 0.8 | 0.2 | 1 | 0.3 | 1 |
| **Waterfowl impact (excluding moorhen)** | Category | Minor | Absent | Major | Minor | Minor |
| | SI Value | 0.67 | 1 | 0.01 | 0.67 | 0.67 |
| **Fish presence** | Category | Absent | Absent | Possible | Absent | Major |
| | SI Value | 1 | 1 | 0.67 | 1 | 0.01 |
| **Number of ponds within 1km not separated by barriers** | Category | 8 | 8 | 10 | 5 | 5 |
| | SI Value | 0.89 | 0.89 | 0.95 | 0.75 | 0.75 |
| **Terrestrial habitat** | Category | Moderate | Moderate | Moderate | Good | Moderate |
| | SI Value | 0.67 | 0.67 | 0.67 | 1 | 0.67 |
| **Percentage of pond surface occupied by aquatic vegetation (March – May)** | Category | 6-10% | 11-15% | 1-5% | 1-5% | 6-10% |
| | SI Value | 0.4 | 0.45 | 0.35 | 0.35 | 0.4 |
| **HSI Score** | | 0.681 | 0.654 | 0.459 | 0.684 | 0.419 |
| **HSI Suitability** | | **Average** | **Average** | **Poor** | **Average** | **Poor** |

*Disclaimer: The HSI Calculator is a tool to provide a general assessment of great crested newt Triturus cristatus habitat suitability in accordance with Oldham et al., 2000 and Brady, 2010. It is the responsibility of the user to check the accuracy of the outputs. The copyright holder accepts no responsibility for repercussions (financial and/or legal) resulting from inaccurate or incorrect outputs.*

| Pond reference | Pond 1 | | | Torch | | | | | | | | | | Bottle-trap | | | | | | | | | | Egg search | Larvae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surveyors | BK + GG<br>AP + GG<br>KK + GG<br>TR + CP | | | Torch | | | | >= 1,000,000 cp | | | | | | No. of traps used in | | | | 20 | | | | | | GCN eggs found? | GCN larvae found? (any method) |
| | | | | GCN | | | | Smooth newt | Palmate newt | Smooth/Palmate | | | | GCN | | | Smooth newt | | | | Palmate newt | | | | |
| Sex/life stage: | | | | M | F | Imm [3] | NS[4] | M | M | F | Imm | NS | | M | F | Imm | M | F | Imm | NS | M | F | Imm | NS | | |
| Date: | Air temp (°C) | Veg cover[1] | Turbidity[2] | | | | | | | | | | | | | | | | | | | | | | |
| 03/04/2025 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 10/04/2025 | 14 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 22/04/2025 | 13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 29/04/2025 | 12 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 14/05/2025 | 15 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| | | | | | | | | | | | | | | | | | | | | | | | | No | No |

| Peak adult GCN count for this pond | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Torching | | | | | Bottle-trap | | | | |
| GCN | | Smooth | Palmate | Smooth/Palmate | GCN | | Smooth newt | | Palmate newt |
| 0 | | 1 | 0 | 2 | 0 | | 0 | | 0 |

| Pond reference | Pond 2 | | | Torch | | | | | | | | | | Bottle-trap | | | | | | | | | | Egg search | Larvae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surveyors | BK + GG<br>AP + GG<br>KK + GG<br>TR + CP | | | Torch | | | | >= 1,000,000 cp | | | | | | No. of traps used in | | | | | | | | | | GCN eggs found? | GCN larvae found? (any method) |
| | | | | GCN | | | | Smooth newt | Palmate newt | Smooth/Palmate | | | | GCN | | | Smooth newt | | | | Palmate newt | | | | |
| Sex/life stage: | | | | M | F | Imm [3] | NS[4] | M | M | F | Imm | NS | | M | F | Imm | M | F | Imm | NS | M | F | Imm | NS | | |
| Date: | Air temp (°C) | Veg cover[1] | Turbidity[2] | | | | | | | | | | | | | | | | | | | | | | |
| 03/04/2025 | 6 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | No | No |
| 10/04/2025 | 14 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 22/04/2025 | 13 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 29/04/2025 | 12 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 14/05/2025 | 15 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| | | | | | | | | | | | | | | | | | | | | | | | | No | No |

| Peak adult GCN count for this pond | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Torching | | | | | Bottle-trap | | | | |
| GCN | | Smooth | Palmate | Smooth/Palmate | GCN | | Smooth newt | | Palmate newt |
| 0 | | 0 | 0 | 0 | 1 | | 4 | | 0 |

| Pond reference | | Pond P1 | | Torch | | | | | | | | | Bottle-trap | | | | | | | | | Egg search | Larvae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surveyors | | AP / TP / TR / LM / BK / CM / RC | | Torch power: | | | | >= 1,000,000 cp | | | | | No. of traps used in pond: | | | 20 | | | | | | GCN eggs found ? | GCN larvae found? (any method) |
| | | | | GCN | | | | Smooth newt | Palmate newt | Smooth/ Palmate | | | GCN | | | Smooth newt | | | | Palmate newt | | | |
| Sex/life stage: | | | | M | F | Imm[3] | NS[4] | M | M | F | Imm | NS | M | F | Imm | M | F | Imm | NS | M | F | Imm | NS | | |
| Date: | Air temp (°C) | Veg cover[1] | Turbidity[2] | | | | | | | | | | | | | | | | | | | | |
| 18/04/2023 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 26/04/2023 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 02/05/2023 | 9 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 11/05/2023 | 11 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 17/05/2023 | 13 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 25/05/2023 | 12 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |

| Peak adult GCN count for this pond | | | | | | |
|---|---|---|---|---|---|---|
| Torching | | | | Bottle-trap | | |
| GCN | Smooth | Palmate | Smooth/ Palmate | GCN | Smooth newt | Palmate newt |
| 0 | 0 | 0 | 2 | 1 | 11 | 0 |

| Pond reference | | Pond P2 | | Torch | | | | | | | | | Bottle-trap | | | | | | | | | | Egg search | Larvae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surveyors | | AP / TP / TR / LM / BK / CM / RC | | Torch power: | | | | >= 1,000,000 cp | | | | | No. of traps used in pond: | | | 25 | | | | | | | GCN eggs found ? | GCN larvae found? (any method) |
| | | | | GCN | | | | Smooth newt | Palmate newt | Smooth/ Palmate | | | GCN | | | Smooth newt | | | | Palmate newt | | | | |
| Sex/life stage: | | | | M | F | Imm[3] | NS[4] | M | M | F | Imm | NS | M | F | Imm | M | F | Imm | NS | M | F | Imm | NS | | |
| Date: | Air temp (°C) | Veg cover[1] | Turbidity[2] | | | | | | | | | | | | | | | | | | | | | |
| 18/04/2023 | 8 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 26/04/2023 | 10 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 02/05/2023 | 9 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 11/05/2023 | 11 | 3 | 2 | 0 | 1 | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 17/05/2023 | 13 | 2 | 2 | 2 | 1 | 0 | 0 | 2 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |
| 25/05/2023 | 12 | 1 | 3 | / | / | / | / | / | / | / | / | / | 2 | 6 | 0 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | No | No |

| Peak adult GCN count for this pond | | | | | | | |
|---|---|---|---|---|---|---|---|
| Torching | | | | Bottle-trap | | | |
| GCN | Smooth | Palmate | Smooth/ Palmate | GCN | Smooth newt | Palmate newt | |
| 3 | 2 | 2 | 14 | 8 | 10 | 0 | |

* Imm - Immature / Juvenile
** NS - Not Specified
*** Vegetation cover score (0 – 5); 0 = no vegetation obscuring survey; 5 = water completely obscured by vegetation
**** Turbidity score (0 – 5); 0 = completely clear; 5 = very turbid

Client:
2250, Lucy Moorhouse, CSA Environmental
1040079-LM CSA, 2250, version 1

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Spring Lodge
172 Chester Road
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WA6 0AR

Tel: 01159 229249
Email: Helen.Rees@adas.co.uk

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| | |
|---|---|
| Sample ID: ADAS-7169 | |
| Client Identifier: P4 | Grid references/coordinates: Not Supplied |
| Description: pond water samples in preservative | Condition on Receipt: Good |
| Date of Receipt : 25/04/2025 | Volume: Passed |

| **Determinant** | **Result** | **Method** | **Date of Analysis** |
|---|---|---|---|
| Inhibition Control[†] | 2 of 2 | Real Time PCR | 05/07/2025 |
| Degradation Control[§] | Within limits | Real Time PCR | 05/07/2025 |
| Great Crested Newt* | 0 of 12 (negative) | Real Time PCR | 05/07/2025 |
| Negative PCR Control (Nuclease Free Water) | 0 of 4 | Real Time PCR | As above for GCN |
| Positive PCR Control (GCN DNA $10^{-4}$ ng/µL)[#] | 4 of 4 | Real Time PCR | As above for GCN |
| Report Prepared by: | Dr Helen Rees | Report Issued by: | Dr Ben Maddison |
| Signed: |  | Signed: |  |
| Position: | Director: Biotechnology | Position: | MD: Biotechnology |
| Date of preparation: | 07/05/2025 | Date of issue: | 07/05/2025 |

*eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.*

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for GCN if all of the replicates are negative; positive for GCN if one or more of the replicates are positive.*

*[†] Recorded as the number of positive replicate reactions at expected $C_t$ value. If the expected $C_t$ value is not*

*[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.*

*[#] Additional positive controls ($10^{-1}$, $10^{-2}$, $10^{-3}$ ng/µL) are also routinely run, results not shown here.*

Client:
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1040079-LM CSA, 2250, version 1

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| | |
|---|---|
| Sample ID: ADAS-7177 | |
| Client Identifier: P5 | Grid references/coordinates: Not Supplied |
| Description: pond water samples in preservative | Condition on Receipt: Good |
| Date of Receipt : 25/04/2025 | Volume: Passed |

| **Determinant** | **Result** | **Method** | **Date of Analysis** |
|---|---|---|---|
| Inhibition Control[†] | 2 of 2 | Real Time PCR | 05/06/2025 |
| Degradation Control[§] | Within limits | Real Time PCR | 05/06/2025 |
| Great Crested Newt* | 0 of 12 (negative) | Real Time PCR | 05/06/2025 |
| Negative PCR Control (Nuclease Free Water) | 0 of 4 | Real Time PCR | As above for GCN |
| Positive PCR Control (GCN DNA $10^{-4}$ ng/µL)[#] | 4 of 4 | Real Time PCR | As above for GCN |
| Report Prepared by: | Dr Helen Rees | Report Issued by: | Dr Ben Maddison |
| Signed: |  | Signed: |  |
| Position: | Director: Biotechnology | Position: | MD: Biotechnology |
| Date of preparation: | 07/05/2025 | Date of issue: | 07/05/2025 |

*eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.*

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for GCN if all of the replicates are negative; positive for GCN if one or more of the replicates are positive.*

*[†] Recorded as the number of positive replicate reactions at expected $C_t$ value. If the expected $C_t$ value is not*

*[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.*

*[#] Additional positive controls ($10^{-1}$, $10^{-2}$, $10^{-3}$ ng/µL) are also routinely run, results not shown here.*

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| | | |
|---|---|---|
| Sample ID: ADAS-5602 | Condition on Receipt: Good | Volume: Passed |
| Client Identifier: P4, 2550 | Description: pond water samples in preservative | |
| Date of Receipt: 20/04/2023 | Material Tested: eDNA from pond water samples | |

| **Determinant** | **Result** | **Method** | **Date of Analysis** |
|---|---|---|---|
| Inhibition Control[†] | 2 of 2 | Real Time PCR | 24/04/2023 |
| Degradation Control[§] | Within Limits | Real Time PCR | 24/04/2023 |
| Great Crested Newt* | 0 of 12 (GCN negative) | Real Time PCR | 24/04/2023 |
| Negative PCR Control (Nuclease Free Water) | 0 of 4 | Real Time PCR | As above for GCN |
| Positive PCR Control (GCN DNA $10^{-4}$ ng/µL)[#] | 4 of 4 | Real Time PCR | As above for GCN |

| | | | |
|---|---|---|---|
| Report Prepared by: | Dr Helen Rees | Report Issued by: | Dr Ben Maddison |
| Signed: |  | Signed: |  |
| Position: | Director: Biotechnology | Position: | MD: Biotechnology |
| Date of preparation: | 25/04/2023 | Date of issue: | 25/04/2023 |

*eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.*

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

*[†] Recorded as the number of positive replicate reactions at expected $C_t$ value. If the expected $C_t$ value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.*

*[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.*

*[#]Additional positive controls ($10^{-1}$, $10^{-2}$, $10^{-3}$ ng/µL) are also routinely run, results not shown here.*

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| | | |
|---|---|---|
| Sample ID: ADAS-5603 | Condition on Receipt: Low Sediment | Volume: Passed |
| Client Identifier: P5, 2550 | Description: pond water samples in preservative | |
| Date of Receipt: 20/04/2023 | Material Tested: eDNA from pond water samples | |

| **Determinant** | **Result** | **Method** | **Date of Analysis** |
|---|---|---|---|
| Inhibition Control[†] | 2 of 2 | Real Time PCR | 24/04/2023 |
| Degradation Control[§] | Within Limits | Real Time PCR | 24/04/2023 |
| Great Crested Newt* | 0 of 12 (GCN negative) | Real Time PCR | 24/04/2023 |
| Negative PCR Control (Nuclease Free Water) | 0 of 4 | Real Time PCR | As above for GCN |
| Positive PCR Control (GCN DNA $10^{-4}$ ng/µL)[#] | 4 of 4 | Real Time PCR | As above for GCN |

| | | | |
|---|---|---|---|
| Report Prepared by: | Dr Helen Rees | Report Issued by: | Dr Ben Maddison |
| Signed: |  | Signed: |  |
| Position: | Director: Biotechnology | Position: | MD: Biotechnology |
| Date of preparation: | 25/04/2023 | Date of issue: | 25/04/2023 |

*eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.*

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

*[†] Recorded as the number of positive replicate reactions at expected $C_t$ value. If the expected $C_t$ value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.*

*[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.*

*[#]Additional positive controls ($10^{-1}$, $10^{-2}$, $10^{-3}$ ng/µL) are also routinely run, results not shown here.*

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