



**Ivy House Farm,
Markfield**

Ecological Appraisal

Heath Cade

July 2026

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The advice within this document has been produced in accordance with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM).

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1.0 Executive Summary

Background
Alca Ecology were commissioned to undertake an Ecological Appraisal at a site located at Ivy House Farm, Markfield. A walkover and desk study were undertaken to assess the potential of the site to support protected or notable species.
Findings
- One statutory designated site and 16 non-statutory designated sites were recorded within the search area. No designated sites are expected to be affected by development due to the relatively small-scale nature of proposals. - The site consists modified grassland, bramble scrub, tall forbs, one building and two native hedgerows. - There is a low likelihood of GCN being impacted, however the risk is considered to be sufficiently mitigated for through the use of a Non-Licensed Method Statement. - No potential bat roosts were recorded within the building. Foraging / commuting / roosting bats are not considered to pose a constraint to development. - Reptiles are not considered to pose a constraint to development. - Badgers are not considered to pose a constraint to development.
Recommendations / Enhancements
- An NLMS is proposed to reduce the likelihood of impacts of GCN. - Precautionary working methods for badgers are recommended. - A lighting strategy is proposed to prevent impacts on bats and other nocturnal wildlife. - It is recommended that a range of bat and bird boxes are used within the site.

2.0 Introduction

Background / Site Context

- 2.1 Alca Ecology Ltd were commissioned to undertake an Ecological Appraisal and Biodiversity Net Gain (BNG) assessment at a site located at Ivy House Farm, Markfield, Leicestershire (central grid ref SK 47115 09179), hereafter referred to as ‘the site’.
- 2.2 A desk study and site walkover were undertaken to categorise present habitats and to determine any potential constraints to development. Recommendations for avoiding harm to protected species / habitats are provided, as well as potential enhancements to improve biodiversity within the development.
- 2.3 The site, approximately 1.1 hectares in size (one c. 0.59ha parcel and one c. 0.51ha parcel) lies in a rural setting to the west of Markfield, off Broad Lane. The site consists of modified grassland, two native hedgerows and small areas of bramble scrub / tall forbs.
- 2.4 The site consists of two parcels, one that will be developed to facilitate proposals (hereafter referred to as the ‘Development Area’ or G1), and another that will be enhanced in order to provide BNG uplift (hereafter referred to as the ‘Enhancement Area’ or G2). Full details of the BNG strategy for the site are provided in a separate report (Alca Ecology, July 2026).
- 2.5 Proposals for the site include the creation of a café and padel courts, with associated parking.

Aims

- 2.6 The aims of this report were to:
 - Categorise the habitats present within the site;
 - Assess the potential of on-site and nearby habitats for their suitability for protected / notable species;
 - Identify any potential constraints to development; and
 - Provide recommendations for further survey / mitigation / enhancement where necessary.

3.0 Methods

Desk Study

- 3.1 A consultation exercise was undertaken whereby baseline ecological information from the last 20 years was collected and analysed. Details of statutory and non-statutory designated sites, granted European Protected Species (EPS) licences and nearby records of protected species were collected from the local ecological records centre (Leicestershire and Rutland Environmental Records Centre (LRERC)) and Natural England (via the Multi Agency Geographic Information for the Countryside (MAGIC) website¹).
- 3.2 The search radius for designated sites was related to the type of site and any potential zones of influence. The following search areas were used:
- 10km from the application area for sites of International Importance (e.g. Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites);
 - 2km from the application area for sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR)); and
 - 1km from the application area for statutory sites of Local Importance (e.g. Local Nature Reserves (LNR)), non-statutory sites of County or Local Importance (e.g., Local Wildlife Sites (LWS)) and species records (e.g. legally protected or otherwise notable species).
- 3.3 OS Maps and Google Earth were also used to assess the context of the local area and to determine any features of potential ecological significance, such as ponds. The Leicester, Leicestershire and Rutland Biodiversity Action Plan² (LBAP) was also consulted.

Habitat Survey

- 3.4 A walkover of the site was undertaken on the 22nd April 2026 by an experienced ecologist / botanist with a Field Identification Skills Certificate (FISC) level 4, GCN CL08 Licence (ref 2018-38299-CLS-CLS) and Water Vole CL31 Displacement Licence (ref 2023-90007-CL31-WVO).
- 3.5 Survey methods broadly followed the UKHab survey methodology. The purpose of the walkover was to classify present habitats and identify any Habitats of Principal Importance for the conservation of biodiversity as listed within Section 41 (S41) of Natural Environment and Rural Communities (NERC) Act 2006³. The abundance of species was quantified using the DAFOR scale, ranging from Dominant (>75%), through Abundant (75-51%), Frequent (50-26%) and Occasional (25-11%) to Rare (10-1%). Eight 1m x 1m quadrat samples were taken for each grassland parcel.

¹ <https://magic.defra.gov.uk/>

² Leicester, Leicestershire and Rutland Biodiversity Action Plan 2016-2026, 2nd edition: December 2016. Available at: <https://www.lrwt.org.uk/about-us/caring-wild-places/biodiversity-action-plan>

³ *The Natural Environment and Rural Communities Act 2006*. [Online]. London: HMSO Available at: <http://www.legislation.gov.uk/ukpga/2006/16/contents>

Protected Species Assessment

- 3.6 During the walkover on the 22nd April 2026, a thorough search of the site was carried out for signs of protected species in accordance with the following Acts / Regulations:
- Part 1 of the Wildlife and Countryside Act 1981 (as amended)⁴;
 - The Protection of Badgers Act 1992⁵;
 - The Conservation of Habitats and Species Regulations 2017 (as amended)⁶; and
 - The Natural Environment and Rural Communities (NERC) Act 2006 S41 Species of Principal Importance for the conservation of biodiversity.
- 3.7 Particular consideration was given to the potential presence of birds, bats, badgers *Meles meles* and amphibians. Where possible, evidence of badger was sought within 30m of the site boundary.
- 3.8 Furthermore, the site was assessed for the potential use by other fauna listed, in accordance with the following (collectively referred to herein as ‘notable species’):
- Species of Principal Importance for the conservation of biodiversity in England listed in S41 of the NERC Act 2006;
 - Red Data Book (RDB) and Red List species;
 - Birds of Conservation Concern (BoCC);
 - Species listed on any Local Biodiversity Action Plan (LBAP) initiatives; and
 - Nationally scarce/notable invertebrate species.

Preliminary Roost Assessment

- 3.9 A Preliminary Roost Assessment (PRA) was undertaken on the single on-site building on the 22nd April 2026 by a licenced bat worker (Natural England Class Licence Registration Number: CL18 Bat Survey Level 2 - 2024-12510-CL18-BAT). The assessment was completed considering the guidance provided in chapters 4 and 5 of the Bat Surveys for Professional Ecologists, Good Practice Guidelines, 2023⁷.

External Assessment

- 3.10 The exterior of the building was visually assessed for potential access points and evidence of bat activity. Features such as small gaps under barge / soffit / fascia boards, raised or missing ridge

⁴ *The Wildlife and Countryside Act 1981 (as amended)*. [Online]. London: HMSO Available from <http://www.legislation.gov.uk/ukpga/1981/69>

⁵ *The Protection of Badgers Act 1992 (as amended)*. [Online]. London: HMSO Available from: <http://www.legislation.gov.uk/ukpga/1992/51/contents>

⁶ *The Conservation of Habitats and Species Regulations 2017 – Statutory Instrument 2017 No.1012*. [Online]. London: HMSO. Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

⁷ Collins, J. (ed.) 2023. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust.

tiles and gaps at gable ends were sought, as these have potential to be used as access points. In addition, structural features were noted that could provide suitable hibernation potential. Evidence that bats actively used potential access points includes staining within gaps and bat droppings or urine staining. A note was made wherever these were present. Where they could be safely accessed, crevices were inspected for the presence of bats or their signs using torches, mirrors and endoscopes.

Internal Assessment

- 3.11 The interior of the building, was also visually assessed to identify potential or actual bat access points and roosting places and for evidence of current or past bat roosts. Definitive evidence of a bat roost was determined by the presence of:
- Dead or live bat(s); and/or
 - Droppings.
- 3.12 Other less definitive signs were also sought as indicators of potential roosting bats, these included:
- Urine staining;
 - Fur-oil staining;
 - Feeding remains such as moth wing fragments;
 - Audible calls;
 - Bat-fly (Nycteribiid) pupal cases; or
 - Odour.
- 3.13 The absence of any of the above evidence was not considered to be definitive evidence that no roosts were present as bats may leave no visible sign of their presence particularly where they occupy inaccessible or hidden spaces within a building.
- 3.14 Subsequently, the buildings (or where relevant, sections of) were categorised according to their suitability to support roosting bats and whether they provide classic or non-classic hibernation potential or not. These were classified according to the features present within the buildings (see Table 1).

Potential Bat Roosting Suitability

- 3.15 Following the internal and external assessment, the buildings were assigned a category according to its roosting suitability which is based on Tables 4.1 and 7.1 of the BCT Guidelines. This potential suitability is used to indicate the likely requirements for any further surveys to determine the presence or absence of roosting bats.

Table 1: Building Bat Roost Habitat Classifications (Based on Tables 4.1 And 7.1 BCT Guidelines)

Roost Suitability	Description of Roosting Habitats	Further Survey Requirements to Provide Confidence in the Likely Absence of Roosting Bats Within a Structure
None	No habitat features on site that are likely to be used by bats at any time of the year.	No further surveys or consideration of roosting bats is required.
Negligible	No obvious habitat features are present that are likely to be used by roosting bats, but features may be present where a bat could theoretically roost but it is considered very unlikely.	No further surveys are required, but some vigilance may be required if the feature is impacted.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or classic hibernation roost).	Up to one single dusk emergence survey undertaken between May and August. (requirement is based on professional judgment). Precautionary method statement if works are to be undertaken during the winter period (where non-classic hibernation potential exits).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Two separate dusk emergence surveys undertaken between May and September and at least one between May and August and spread at least 3 weeks apart. Precautionary method statement if works are to be undertaken during the winter period (where non classic hibernation potential exits).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support High conservation status roosts such as those used for maternity or hibernation (classic site).	Three separate dusk emergence surveys undertaken between May and September and at least two between May and August and spread at least 3 weeks apart. Where classic hibernation potential is present hibernation surveys should be undertaken during the winter period.
A classic hibernation site is considered to provide stable climatic conditions including temperature humidity, and light level such as, but not exclusively limited to underground structures which are subject to low levels of disturbance or species-specific habitual requirements such as where brown long-eared bats often use the same roosts for maternity and hibernation purposes. A non-classic hibernation site is a location which does conform to the criteria above but could be used by individual hibernating bats. It usually not possible to identify non-classic hibernation sites through surveys work.		

Ground Level Tree Assessment

3.16 A Gound Level Tree Assessment (GLTA) was undertaken on all trees, based on most recent guidance⁸. Trees were examined with binoculars, making note of any potential roost features (PRFs) that may provide entry/exit points for bats. Any PRFs found were categorised based on their suitability and size, using the following terms:

- NONE: No features present or likely to be present.
- FAR: Further assessment is required to establish whether PRFs are present.
- PRF-I: The PRF is suitable for individual or small numbers of bats.

- PRF-M: The PRF is suitable for multiple bats and may be used by a maternity colony.

Great Crested Newt (GCN)

Environmental DNA (eDNA) Surveys

- 3.17 eDNA surveys were undertaken at ponds P1, P2, P3, P5, P7 and P8 to determine the presence / absence of great crested newt *Triturus cristatus*.
- 3.18 eDNA surveys were conducted by a CL08 licence holder on the 22nd April 2026 during clear, sunny weather with no rain.
- 3.19 Twenty water samples were taken from 20 locations around each pond. These samples were then thoroughly mixed, and 15ml placed into 6 sterile tubes containing preservative. Samples were analysed by ADAS.

Habitat Suitability Index (HSI) Assessment

- 3.20 Ponds P1, P2, P3, P5, P7 and P8 were subject to an HSI assessment, which measures the likely suitability for a pond to support Great Crested Newts (GCN). This does not determine whether a pond supports GCN, however ponds with a higher HSI score are more likely to contain GCN, and vice versa. HSI is calculated using 10 attributes, which are multiplied together, the tenth root is calculated, which then gives a score between 0 and 1, with 1 being the highest score. Pond suitability is determined as follows:
- <0.5: Poor;
 - 0.5-0.59: Below average;
 - 0.6-0.69: Average;
 - 0.7-0.79: Good; and
 - >0.8: Excellent.

Limitations

- 3.21 One area within the survey area had been recently mown, however it was still possible to determine the species present, and therefore this did not impact the habitat classification or condition assessment.

4.0 Results

Desk Study

- 4.1 One site of statutory significance was recorded within the search area, which was designated for geological interest.
- 4.2 One notified Local Wildlife Site (LWS) was also recorded (c. 650m south of the site), as well as 15 sites that are not fully notified (seven candidate LWS (cLWS), two potential LWS (pLWS) and six historic LWS (hLWS)).
- 4.3 Priority Habitats / Habitats of Principal Importance within 1km include:
- One parcel of Good Quality Semi-Improved Grassland approximately 900m southwest of the site boundary; and
 - Nine parcels of Priority Habitat Inventory (PHI) Deciduous Woodland (the nearest of which is approximately 230m south of the site boundary).
- 4.4 The site also lies within a SSSI Impact Risk Zone (IRZ).
- 4.5 The locations of statutory and non-statutory designated sites are shown in Figure 1. Table 2 below provides details of the statutory sites, while Appendix 3 details the non-statutory designated sites, with notified sites in bold.

Table 2: Designated Sites Recorded Within the Search Area

Site Name / Designation	Approx. Distance from Proposed Site	Summary
Cliffe Hill Quarry SSSI	1.35km N	Designated for geological interest

Protected Species

- 4.6 Three European Protected Species Licences (EPSL) were recorded within the search area. These included licences for the destruction of:
- Common pipistrelle *Pipistrellus pipistrellus* roost (2019 – c. 100m north)
 - Soprano pipistrelle *Pipistrellus pygmaeus* / brown long-eared *Plecotus auritus* roost (2012 – c. 1,300m south)
 - Common pipistrelle roost (2011 – c. 1,600m south)
- 4.7 A total of 610 records of protected and notable species were returned from the local records centre. A summary of these is provided in Table 3 and records an overview is shown in Figure 1.

Table 3: Species Records Returned from Within the Search Area.

Species	No. of Records	Approx. Location of Closest Record / Most Recent Year	Description
Brandt's bat <i>Myotis brandtii</i>	2	0.9km N / 2022	-
Brown long-eared bat <i>Plecotus auritus</i>	40	0.1km N / 2023	Seven roosts
Common pipistrelle <i>Pipistrellus pipistrellus</i>	124	0.1km N / 2025	Six roosts
Daubenton's bat <i>Myotis daubentonii</i>	14	1.05km S / 2023	One roost
Serotine <i>Cnephaeus serotinus</i>	8	1.3km SW / 2020	-
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	178	Adjacent / 2023	One roost
Leisler's bat <i>Nyctalus leisleri</i>	20	0.7km W / 2022	-
Nathusius's pipistrelle <i>Pipistrellus nathusii</i>	17	0.96km N / 2023	-
Natterer's bat <i>Myotis natterii</i>	4	0.9km N / 2023	One roost
Noctule <i>Nyctalus noctula</i>	61	0.7km W / 2025	-
Whiskered bat <i>Myotis mystacinus</i>	5	0.9km N / 2022	Roost
Unidentified bat species	11	0.1km N / 2020	Four roosts
Unidentified Myotis species	39	0.12km N / 2023	-
Unidentified Nyctalus species	10	1.35km SW / 2020	-
Unidentified Pipistrellus species	24	1.25km SE / 2020	-
Badger <i>Meles meles</i>	6	0.18km S / 2023	One sett record
Grass snake <i>Natrix helvetica</i>	1	0.67km N / 2019	-
Great crested newt <i>Triturus cristatus</i>	6	0.78km N / 2015	-
Smooth newt <i>Lissotriton vulgaris</i>	1	0.78km N / 2015	-
Common frog <i>Rana temporaria</i>	3	0.87km S / 2015	-
Crossbill <i>Loxia curvirostra</i>	1	0.77km N / 2019	-
Hobby <i>Falco subbuteo</i>	2	0.65km S / 2017	-
Fieldfare <i>Turdus pilaris</i>	5	0.36km S / 2020	-
Peregrine <i>Falco peregrinus</i>	6	0.77km N / 2019	-
Redwing <i>Turdus iliacus</i>	9	0.37km S / 2021	-
Bluebell <i>Hyacinthoides non-scripta</i>	11	0.18m S / 2024	-
Purple emperor <i>Apatura iris</i>	2	0.78km S / 2023	-

Field Study

Habitats

- 4.8 The site consists of two parcels, one which will be developed to facilitate proposals, and another which will be enhanced of grassland.
- 4.9 G1 consisted of a horse paddock, which at the time of survey was closely grazed. This area is grazed throughout the year. G2 also consisted of modified grassland but had been recently mown. G2 is also grazed, though the level of grazing in G2 varies at different times of year. A single barn building lies to the south of the site.
- 4.10 Baseline habitats are shown in Figure 3. Condition assessment details are provided in the accompanying BNG report (Alca Ecology, July 2026).

Modified Grassland

- 4.11 Both grassland parcels were considered to constitute modified grassland. Quadrat data is provided in Appendix 4.

Development Area (G1)

- 4.12 At the time of survey, G1 consisted of a modified grassland horse paddock. The sward was very low at the time of survey, c. 5cm or less.
- 4.13 Species present included, but were not limited to, dominant to abundant instances of Yorkshire fog *Holcus lanatus*, abundant instances of white clover *Trifolium repens*, locally frequent instances of cat's ear *Hypochaeris radicata*, occasional to rare instances of perennial ryegrass *Lolium perenne*, occasional instances of cock's foot *Dactylis glomerata* and rare instances of broadleaved dock *Rumex obtusifolius*, mouse ear *Cerastium fontanum*, meadow buttercup *Ranunculus acris*, ribwort plantain *Plantago lanceolata*, nettle *Urtica dioica*, thyme-leaved speedwell *Veronica serpyllifolia*, dandelion *Taraxacum* agg., creeping buttercup *Ranunculus repens*, ragwort *Jacobaea vulgaris*, selfheal *Prunella vulgaris* and yarrow *Achillea millefolium*.
- 4.14 Species diversity varied between 6 and 7 species per m² (average of 6.4), and the grassland was assessed as being in moderate condition.

Enhancement Area (G2)

- 4.15 G2 was broadly similar to G1, however it had not been recently grazed, and had been mown prior to the survey. According to the landowner this area is mown regularly early in the season when it is not being grazed, then horse-grazed later in the season.
- 4.16 Species present included, but are not limited to, dominant instances of Yorkshire fog, frequent instances of meadow foxtail *Alopecurus pratensis*, occasional instances of dandelion and rare instances of broadleaved dock, red fescue *Festuca rubra*, spear thistle *Cirsium vulgare*, meadow buttercup, creeping buttercup, ribwort plantain.

- 4.17 Species diversity in G2 also varied between 6 and 7 species per m² (average of 6.25), and the grassland was assessed as being in moderate condition.

Bramble Scrub

- 4.18 A small patch of bramble scrub lies in the north of G1.
- 4.19 The condition assessment for this habitat type is automatically set to N/A.

Tall Forbs

- 4.20 A patch of tall forbs containing nettle *Urtica dioica* and broadleaved dock *Rumex obtusifolius* lies along the southeastern section of the grassland G1.
- 4.21 This area was assessed as being in poor condition.

Linear Habitats

- 4.22 Two linear features are present within the site, including one native hedgerow and one native hedgerow with trees.
- 4.23 Hedgerow H1 is a native hedgerow that runs along the northern boundary of G1 and consists of hawthorn *Crataegus monogyna* and holly *Ilex aquifolium*. This hedgerow was c. 3-4m tall and c. 2-3m wide. No banks or ditches were associated with this hedgerow.
- 4.24 Hedgerow H2 is a native hedgerow with trees runs along the western boundary of G1 and contains hawthorn *Crataegus monogyna*, English oak *Quercus robur*, elder *Sambucus nigra* and holly *Ilex aquifolium*. This hedgerow was becoming outgrown, at c. 5m tall and 4-5m thick, though still resembled a hedgerow. Large amounts of bramble grew through the base. A dry ditch runs along the edge of hedgerow H2.
- 4.25 Both hedgerows were assessed as being in good condition.

Developed Land; Sealed Surface

- 4.26 A single building is present, which is detailed in the below section.

Protected Species

Bats – Preliminary Roost Assessment / Ground Level Tree Assessment

- 4.27 A total of 557 bat records were returned from within 2km of the site.
- 4.28 One tree within hedgerow H2 (shown as TN1 on Figure 3), contained features which may be suitable for roosting bats. This were categorised as FAR. All other trees were categorised as NONE.
- 4.29 Building B1 was a concrete framed ancillary building with cinderblock and corrugated metal walls. Cinderblocks formed the lower section of the wall only, then corrugated metal formed the upper part, with minimal crossover. The building had a single layered, pitched roof with composite corrugated sheeting.

- 4.30 On the northern aspect, two wooden stables and one small lean-to storage area, with single layered, metal corrugated roofs were attached and currently used for storage and housing horses. The walls were formed of single skinned vertical wooden slats.
- 4.31 No potential roosting features were recorded at the time of the survey. Internal survey of the buildings did not record any field signs of bats using the building for roosting or feeding. The building, including the barn and attached stables / storage area was categorised as having negligible potential for roosting bats and works can continue without further work for bats.

Bats – Foraging / Commuting

- 4.32 Grassland G1 itself provides suboptimal foraging habitat owing to the very low sward of the grassland, however the bordering linear features (H1 and H2) provide good foraging habitat for bats.
- 4.33 Grassland G2 provides moderate foraging habitat for bats.

Amphibians / Reptiles

- 4.34 Six records of GCN were returned within 1km. The nearest record of GCN was approximately 1.2km south. In addition, one smooth newt *Lissotriton vulgaris* and three common frog *Rana temporaria* records were returned. One grass snake *Natrix helvetica* record was returned, c. 670m from the site.
- 4.35 Eight ponds were recorded within 250m of the site. Each pond was assessed and a GCN eDNA survey conducted where possible. A Habitat Suitability Index (HSI) assessment was also undertaken on each pond.
- 4.36 Pond P1 was adjacent to grassland G2. Pond P2 was c. 25m north of the site boundary. Pond P3 was c. 170m west of the site boundary. Pond P4 was c. 100m southwest of the site and was dry at the time of survey, showing no signs of having recently held water, and therefore was not assessed further. Pond P5 was c. 180m southwest of the site. Pond P6 was c. 230m south of the site. Pond P7 was adjacent to the site boundary. Pond P8 was c. 10m south of the site boundary and consisted of two newly constructed ponds that were connected by a channel, with water pumped from the lower pond up to the higher pond.
- 4.37 The results of the GCN eDNA survey and HSI assessment are shown below in Table 4. GCN eDNA results and pond locations are shown in Figure 2. The nearest pond that yielded a positive eDNA result was c. 20m north of the site boundary (pond P2). In total, four of the eight nearby ponds yielded positive GCN results. GCN eDNA results are provided in Appendix 5.
- 4.38 Grassland G1 was closely grazed with a sward of c. 5cm, which is considered suboptimal for GCN / amphibians / reptiles. The linear habitats, tall forbs and small area of bramble scrub provide commuting / hibernating / foraging habitat for amphibians and reptiles.

Table 4: Pond HSI / GCN eDNA Results

	Pond Label	P1	P2	P3	P5	P6	P7	P8
SI No	SI Description	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value	SI Value
1	Geographic location	1	1	1	1	1	1	1
2	Pond area	0.6	0.4	0.1	0.4	0.1	0.1	0.1
3	Pond permanence	0.5	0.9	0.1	0.9	0.5	0.7	0.9
4	Water quality	1	1	0.33	1	1	1	0.01
5	Shade	1	0.6	0.2	1	1	1	1
6	Waterfowl effect	0.67	0.67	1	0.67	0.67	0.67	1
7	Fish presence	1	1	1	0.33	1	0.33	1
8	Pond Density	1	1	1	1	1	1	1
9	Terrestrial habitat	0.67	0.67	0.67	0.67	0.67	0.67	0.67
10	Macrophyte cover	0.9	0.9	0.8	0.8	0.7	0.4	0.4
HSI Score		0.81	0.78	0.45	0.73	0.66	0.58	0.43
Pond suitability		Excellent	Good	Poor	Good	Average	Below average	Poor
GCN eDNA Survey Result		Present	Present	Absent	Present	Present	Absent	Absent

Badger

- 4.39 Six badger records were returned, the closest of which was a sett approximately 180m away.
- 4.40 No badger setts or other badger evidence was recorded during the survey within, or adjacent to the site. The site provides suitable badger foraging habitat.

Birds

- 4.41 The habitats present provide some suitable breeding habitat for birds in the form of the native hedgerows and bramble scrub.

Water Vole / Otter

- 4.42 No suitable riparian mammal habitat lies within or near to the proposed development area and so riparian mammals are not assessed further.

Other Species

- 4.43 The site likely provides foraging potential for hedgehog *Erinaceus europaeus*. Invertebrate usage of the site overall is not considered to be significant.

5.0 Discussion / Recommendations

5.1 The following provides an appraisal of impacts on the site based on proposals (26-31.5, TAOB) and provides recommendations for enhancing biodiversity within the proposed development.

5.2 Proposals for the site include the creation of a café and padel courts, with associated parking.

Designated Sites

5.3 One nationally important designated site (SSSI) is located approximately 1.35km north of the site. Furthermore, one notified non-statutory designated site (LWS) and 15 candidate / potential / historic LWS are located within 1km. A number of Priority Habitats are also recorded within the search area.

5.4 Due to the relatively small scale of the proposals, no adverse impacts are expected upon these areas.

5.5 The site lies within a SSSI IRZ, however development of this type is not listed as a potential impact and therefore consultation with Natural England is not required.

Habitats

5.6 Proposals for the site include the construction of padel courts with access from Broad Lane. Proposals for the creation of the padel courts cover only grassland G1, with the remaining area, grassland G2, to be used for habitat enhancement.

5.7 The development will result in the loss of the majority of G1, which consists of modified grassland in moderate condition. This area is used to graze horses throughout most of the year and so currently contains a very low sward.

5.8 A very small (c. 4m) section of hedgerow H1 will be removed to facilitate the creation of a walkway between the school to the north and the padel courts. An area of tall forbs (nettle and dock) will also be removed.

5.9 Grassland G2, which contains modified grassland in moderate condition will be enhanced to other neutral grassland in moderate condition through a combination of changes to the grazing / mowing regime and overseeding.

5.10 All hedgerows will be retained, however some trimming of hedgerow H2 will be undertaken in order to improve the visibility splay.

5.11 A total of 20 native trees and 40m of native hedgerow will also be planted within the proposed car park and around the proposed padel courts.

5.12 Due to the site's relatively small scale, and the abundance of similar habitats in the surrounding area, the loss of the modified grassland is not considered to result in a significant impact on biodiversity on a local scale. Furthermore, the enhancements within grassland G2 and planting of

trees / hedgerows across the site will further reduce the scale of impact within the site and at a local scale.

Protected Species

Bats

- 5.13 The majority of the habitats to be lost (grassland G1 and tall forb vegetation) are considered to provide suboptimal foraging / commuting habitat for bats. The linear habitats (native hedgerow (H1) / native hedgerow with trees (H2)) provide good foraging / commuting habitat. Due to the small size of the site, it is considered highly unlikely to provide habitat for a significant assemblage of bats.
- 5.14 The loss of the modified grassland, small section of hedgerow H1 and tall forbs within the Development Area is not considered to result in significant impacts to bats in the local area. All linear habitats are due to be retained within the proposals, and 20 trees are proposed to be planted, as well as 40m of native hedgerow. This will still allow bats to forage and commute within the site, with the exception of when the padel courts are in use during night-time / dark hours. Though opening hours have not yet been provided, the padel courts will shut overnight, and overnight lighting will not be used except for security purposes.
- 5.15 A Lighting Strategy is provided below in order to reduce the potential impact of commuting / foraging bats, as well as bats potentially roosting in off-site adjacent trees.
- 5.16 The trees within the site will be retained, including the single tree (TN1) assessed as FAR. No further inspection of tree TN1 is required, however this tree should not be lit and should be protected from light spill. The below Lighting Strategy provides details on how the risk of impact can be achieved.
- 5.17 No further bat surveys are recommended, and bats are not considered to pose a constraint to development.
- 5.18 Ecological enhancements in the form of bat boxes within the proposed buildings are proposed (details provided below).

Great Crested Newts (GCN)

- 5.19 Six GCN records were returned from the search area. Eight ponds were recorded within 250m of the site. Of the eight ponds, four tested positive for GCN eDNA (GCN present), three tested negative (GCN absent) and one was dry.
- 5.20 The nearest pond containing GCN was pond P2, which was c. 25m from the site boundary. Pond P1 located adjacent to the Enhancement Area, however it is c. 120m from where proposed works will take place. The remaining two pond which contain GCN are c. 190m and 250m from the proposed works area, respectively.

- 5.21 The only habitat loss that is required is the removal of the modified grassland, 4m section of native hedgerow and area of tall forbs. Given the very low sward (c. 5cm) and ongoing, regular grazing of grassland G1, it is considered highly unlikely that GCN would be present during construction as these habitats do not provide any cover. The removal of the hedgerow section and tall forbs would result in the very small loss of some potential foraging / commuting / hibernation habitat.
- 5.22 The rapid risk assessment tool within the Great Crested Newt Method Statement for EPS licence application was used to explore the potential risk of an offence resulting from harm to GCN. In this instance the rapid risk assessment result is 'Amber: offence likely' (see output below).

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.5
Land 100-250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.1
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.5
Rapid risk assessment result:		AMBER: OFFENCE LIKELY

- 5.23 Though the above output indicates an offence is likely, the risk is considered to be greatly reduced by the poor suitability of most of the habitats which are proposed to be lost, i.e. very low sward grassland. For such results, non-licensed avoidance measures may be used to minimise impacts to GCN and are considered a sufficient level of mitigation to avoid any potential impacts on individual GCN.
- 5.24 It is considered that the use of a Non-Licensed Method Statement (NLMS) for the removal the vegetation is a suitable approach in this instance. This includes sensitive timing of works, ecological supervision, staged removal of vegetation, toolbox talks and other precautionary working methods. In the unlikely event that GCN are found on-site during construction, works should cease and a GCN licenced ecologist should be contacted.
- 5.25 Full details of the NLMS are provided in Appendix 2.

Badgers

- 5.26 Six badger records were returned, the closest of which was approximately 180 from the site.
- 5.27 No badger setts were recorded within the site or in the surrounding 30m, however the site does provide foraging potential for badger.
- 5.28 If any signs of badger (i.e. droppings, fresh digging) are observed during the construction phase, it is recommended that an update survey by a suitably experienced ecologist be carried out. A pre-commencement survey for badgers should also be conducted within the 4-week period prior to site commencement.

5.29 As the site contains suitable badger foraging habitat, the following precautionary working methods should be followed during the construction phase:

- To prevent badgers being trapped, all pipes that have the potential to allow badger / mammal ingress (i.e. 15cm or greater in diameter) shall be capped when not in use;
- Hazardous chemicals such as diesel / oil to be stored in a fenced / locked COSHH store;
- Any excavations / pits will be covered overnight, and a plank or board ramp be left within the hole at a maximum 45-degree angle to allow the escape of any badger (or other animal);
- The site shall not be lit overnight; and
- Any piles of soil shall either be covered or compacted to prevent badgers from digging in and creating setts.

Birds

5.30 When nesting, all wild birds are protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). This includes the intentional or reckless destruction of nests from the nest-building phase through to when all chicks have fully fledged the nest. This also includes any disturbance that leads to nest desertion. Some habitats (native hedgerows and bramble scrub) present provide good suitability for nesting birds.

5.31 The removal of the any dense vegetation such as the section of hedgerow H1 should take place outside of the peak bird breeding season (i.e. avoiding the period March to September, inclusive). If this is not possible, any habitat clearance must be preceded by a nesting bird survey, conducted by a suitably experienced ecologist. If any active nests are found to be present, the nest will have to be buffered and left until all chicks have fledged.

Reptiles

5.32 One grass snake record from 2019 was returned from approximately 670m away. While the site offers some limited potential for reptiles, it is considered unlikely that reptiles would be present within the site.

5.33 In light of the above, reptile surveys are not recommended, and reptiles are not considered a statutory constraint to development. The clearance methods detailed within the NLMS (Appendix 2) will reduce the risk of reptiles being harmed during vegetation clearance.

Other Species

5.34 No significant adverse impacts are anticipated on other species such as hedgehog, invertebrates or fish.

Lighting Strategy

- 5.35 At the time of assessment, detailed proposals for external, security, access, parking or padel court lighting had not been provided, nor the proposed times for which the site would be operational. Given the rural setting of the site, its proximity to woodland and boundary vegetation (including one tree categorised as FAR) and the presence of locally recorded bat species, any new lighting should be carefully designed to avoid disturbance to bats and other nocturnal wildlife.
- 5.36 Where external lighting is needed for safety or operational reasons, it should be kept to the minimum necessary. Lighting should be low-level, directional and downward-facing, with fittings positioned and shielded (i.e. fitted with rear guards) to avoid light spill onto retained trees, hedgerows, grassland, woodland edges and other boundary habitats. Cool-white or blue-rich lighting should be avoided, with warm-spectrum lighting of 2,700 K or below used where practicable.
- 5.37 A detailed Ecological Lighting Strategy or similar may be required before any new external lighting is installed. This should show the location and specification of all permanent and temporary lighting, mounting heights, beam direction, colour temperature, predicted lux levels, operational hours and controls such as timers, dimming and motion sensors. It should also cover decorative, festoon and event-related lighting associated with the wedding and event use.
- 5.38 No floodlighting, uplighting or unnecessary illumination of trees, hedgerows, woodland edges or grassland should take place. A dark corridor should be maintained along ecological boundary features, with lighting switched off or reduced to essential safety lighting outside operational hours. This will help retain the ecological function of the site and reduce disturbance to nocturnal wildlife.

Enhancements

- 5.39 It is recommended that native plant species are used within proposals, particularly native tree species. These should include a mix berry / nut bearing native shrubs such as holly, beech *Fagus sylvatica*, hazel *Corylus avellana*, hornbeam *Carpinus betulus* or English oak.
- 5.40 Consideration should be given to the use of bat and bird boxes on the proposed building and on trees within the ownership of the client (within hedgerow H2 or outside the site boundary). These should include at least one integrated swift *Apus apus* box, at least one integrated bat box on the proposed building and at least two tree bat/bird boxes.
- 5.41 Swift bricks should be placed as high as possible (at least 5m high), tightly against the eaves, orientated somewhere between north and east. Swifts are a colony-breeding species, therefore where possible several swift bricks should be placed together.
- 5.42 Bat bricks should also be placed as high as possible (at least 4m high) in a location that gets sun for part of the day (somewhere between southeast and southwest). Many integrated bat and bird

boxes, including those shown below, match standard UK brick dimensions and can therefore be easily incorporated to buildings.

- 5.43 Bird boxes placed on trees should be placed 1-3m from the ground, ideally hidden from view and sheltered from the elements (not in direct sunlight or exposed to strong winds). If any large existing trees have ivy growing on them, placing bird boxes amongst within will be beneficial. Bat boxes should be placed at least 3m from the ground in areas with more sunlight.
- 5.44 A range of bat boxes are available which are suitable for buildings. Four examples are shown below.
- 5.45 The above recommendations will provide enhancements to the existing biodiversity value of the site overall by providing additional roosting habitat for bats and breeding habitat for birds, as well as improving biodiversity within boundary features.



Example 1: Vivara Pro UK Build-in WoodStone Bat Box, potential integrated bat box. Courtesy of nhbs.com



Example 2: PRO UK Rendered Build-in Swift Box, potential integrated bird box. Courtesy of nhbs.com



Example 3: Wooden Bird Nest with 32mm Entrance, suitable for use on retained trees. Courtesy of nhbs.com



Example 4: Kent Bat Box, suitable bat box for use on trees. Courtesy of nhbs.com

Appendix 1: Site Photos



Photo 1: Modified grassland in G1 and hedgerow H2.



Photo 2: Very low sward present in G1



Photo 3: Hedgerow H1 and bramble scrub



Photo 4: Tree TN1 categorised as FAR



Photo 5: Proposed site entrance



Photo 6: Tall forbs



Photo 7: Enhancement Area (G2)



Photo 8: B1 exterior



Photo 9: B1 exterior



Photo 10: B1 exterior



Photo 11: B1 interior



Photo 12: B1 interior



Photo 13: B1 lean-to interior



Photo 14: Horse stables attached to B1

Appendix 2: GCN Non-Licensed Method Statement

Great crested newt *Triturus cristatus* is a European Protected Species. The ecological appraisal identified eight ponds within 250 m of the site, of which four returned positive eDNA results for great crested newt. The nearest positive pond, P2, is located approximately 25 m north of the site boundary. A further positive pond, P1, lies adjacent to the enhancement land to the south-east of the development area.

The proposed development would mostly affect closely grazed, very low sward modified grassland within the development area, together with a 4m stretch of native hedgerow and an area of tall forb vegetation. The main grassland sward is very short, generally around 5 cm or less, and is considered to provide limited suitability for GCN. However, the tall forb vegetation and native hedgerow may provide occasional cover, foraging, shelter and dispersal opportunities for amphibians.

The measures set out below are designed to avoid harm or disturbance to GCN during vegetation clearance and construction activities. They will also provide precautionary protection for other amphibians, reptiles, nesting birds and small mammals.

Timing of Works

Initial vegetation clearance of native hedgerows, tall forbs and other potentially suitable habitat should be undertaken during the active season for great crested newts, between March and September inclusive, where practicable. This is when animals are more likely to be using aquatic habitats and are generally more able to move away from disturbance.

Works should avoid periods of prolonged cold, drought or exceptionally dry weather. Clearance should preferably be undertaken in suitable mild / damp conditions.

Where clearance is proposed outside this period, or following a substantial delay after the ecological appraisal, advice should first be sought from a suitably qualified ecologist to confirm whether the method statement remains appropriate.

Pre-Commencement Measures

Before vegetation clearance or ground disturbance begins, a suitably qualified and experienced ecologist will undertake a pre-commencement check of the affected areas. This will include the tall forbs (nettles / docks), any grassland margins at the base of hedgerows, lost and retained hedgerow bases, any debris, stored materials and other features capable of providing temporary refuge for amphibians.

The ecologist will identify the exact vegetation clearance extent and confirm that the proposed works remain confined to the approved development footprint. Retained hedgerows and off-site trees, pond margins and areas outside the development footprint will be clearly demarcated and protected from encroachment, storage and vehicle movements.

A toolbox talk will be delivered to all relevant site operatives before works commence. This will cover:

- the legal protection afforded to GCN and other protected species;
- identification of GCN and other amphibians;
- the working methods and ecological constraints set out within this document;
- the need to avoid unnecessary disturbance to retained habitat;
- the stop-work procedure should a protected species be encountered; and
- site contact details for the appointed ecologist.

Vegetation Clearance Methodology

Vegetation clearance will proceed in a staged and directional manner to encourage any animals present to disperse naturally into retained habitat away from the works area.

The tall forb vegetation will be cleared under ecological supervision using the following method:

Vegetation will first be cut to a height of no less than approximately 150mm above ground level. Clearance will proceed from the side closest to retained suitable habitat and work progressively towards the open, developed area, avoiding the creation of enclosed areas or trapping points.

Following the initial cut, the ecologist will inspect the cleared area by hand, including the vegetation base, any dense clumps, edges, sheltered features, debris and potential refuges.

Once the ecologist is satisfied that the initial clearance area is clear, vegetation may be removed to ground level. This will be undertaken carefully, using hand-held equipment where necessary in close proximity to boundary vegetation or other retained habitat.

Any arisings will be removed promptly from the work area and will not be stored adjacent to retained hedgerows, trees, ponds, bramble, grassland margins or other suitable amphibian habitat.

The closely grazed modified grassland may be cleared using standard machinery once the higher-risk vegetation has been removed and checked. Machinery will operate from already disturbed ground where practicable and should avoid unnecessary tracking or turning within retained vegetation.

No vegetation will be pushed, dragged or stockpiled into retained habitat. Retained hedgerows and their bases will not be subject to clearance, soil deposition, material storage or vehicle encroachment.

Construction Controls

The following measures will be implemented throughout construction:

- Construction materials, machinery, temporary welfare facilities, skips, stockpiles and fuel stores will be located away from the northern and eastern parts of the site and as far as practicable from P1, P2, P7, P8 and retained boundary vegetation.
- No materials, spoil, vegetation arisings or waste will be stored within retained hedgerows, beneath retained trees, within pond buffers or within the Enhancement Area.
- Open excavations, trenches and pits will either be securely covered overnight or provided with a suitable escape ramp, such as a roughened timber plank placed at an angle of no greater than 45 degrees.
- Any pipes greater than 150mm in diameter will be capped or otherwise sealed when not in active use to prevent animals entering and becoming trapped.
- Site lighting will be limited to that necessary for safe working. Lighting will be directed away from retained hedgerows, off-site trees, pond margins and the enhancement area. No unnecessary overnight lighting will be used.
- Fuel, oil, cement, chemicals and other potentially polluting substances will be stored securely within an appropriate bunded or locked storage area. Refuelling will be undertaken away from ponds and retained vegetation.
- Any accidental spill or pollution incident will be contained immediately and reported to the site manager and appointed ecologist where there is potential for effects on retained ecological features.

Procedure if GCN Is Found

Should a great crested newt, or other amphibian, reptile or other protected species be encountered during works, all works in the immediate area will stop immediately.

The animal will not be handled unless by a person appropriately licensed and authorised to do so. The site manager will contact the appointed suitably qualified ecologist for advice. Works will not recommence within the affected area until the ecologist has inspected the location and confirmed the appropriate course of action.

Where the presence of GCN indicates that the proposed precautionary approach is no longer sufficient, further mitigation, additional survey work and/or a Natural England licence may be required before works can continue.

Appendix 3: Non-Statutory Designated Sites

Site Type	Site Name	Summary	Label on Fig. 1
LWS (Potential)	Stanton under Bardon, Fir Tree House Oaks	Two large mature Oaks in hedgerow, described as 'near-veteran'. Dimensions unknown	1
LWS (Candidate)	Thornton, The Partings plantation pond	Small pond, a former parish-level field pond, now surrounded by recent plantation, with <i>Potamogeton natans</i>	2
LWS (Candidate)	Markfield, Elliott's Lane hedge	Species-rich hedge, with Oak/Ash trees and deep ditch, along busy lane. 5-6spp/30m stretch	3
LWS (Candidate)	Stanton under Bardon, Thornton Lane Ash	Large hedgerow Ash, 1100mm diameter, Ivy covered	4
LWS (Candidate)	Stanton Under Bardon, Ash-2	Ash, 1200mm stem diameter	5
LWS (Candidate)	Stanton Under Bardon, Ash-1	Ash, 1200mm stem diameter	6
LWS (Notified)	Thornton Reservoir	Reservoir with emergent & floating vegetation, significant bird & amphibian assemblages, mature trees - 2 <i>Fraxinus excelsior</i> , species-rich hedgerows, woodland and Red Data Book species. Community value.	7
LWS (Candidate)	Markfield, Cliffe Hill Rd verge	Narrow but species-rich verge on busy road, backed by dense scrub and quarry.	8
LWS (Potential)	Stanton under Bardon, Main St hedgerow	Hedgerow	9
LWS (Candidate)	Old Cliffe Hill Quarry, lagoon south of void	Former quarry lagoon with <i>Typha latifolia</i> and a <i>Potamogeton</i>	10
LWS - Potential / Historic	Pond	Pond	11
LWS - Potential / Historic	Hedgerow	Hedgerow	12
LWS - Potential / Historic	Semi-improved grassland	Grassland	13
LWS - Potential / Historic	Pond	Pond	14
LWS - Potential / Historic	Hedgerow and grassland	Hedgerow	15
LWS - Potential / Historic	Grassland	Hedgerow	16

Appendix 4: Quadrat Data

Common Name	Quadrat Number – Grassland G1								Quadrat Number – Grassland G2							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Yorkshire fog	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Meadow foxtail			/		/	/	/		/		/		/	/	/	/
Broadleaved dock	/				/		/			/			/	/		
Red fescue									/			/		/		/
Perennial ryegrass					/		/	/								
Cock's foot	/		/	/						/			/			/
Ribwort plantain											/			/		
Cat's ear		/										/				
Common mouse ear	/			/						/	/				/	
Dandelion			/	/			/	/		/			/			/
White clover	/	/			/	/	/	/					/	/		
Creeping thistle										/		/				
Spear thistle				/					/		/			/		
Ivy field speedwell					/		/									/
Ragwort				/					/				/			
Creeping buttercup	/	/					/							/		
Meadow buttercup	/				/			/		/		/				
Common sorrel															/	
Hogweed					/							/				
Yarrow		/				/		/								
Daisy		/				/		/								
Total per m²	7	6	4	6	8	5	8	7	7	7	5	6	7	8	4	6
Average per m²	6.4								6.25							

Appendix 5: GCN eDNA Results

Client:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



RSK ADAS Ltd
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172 Chester Road
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Tel: 01159 229249
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Sample ID: ADAS-7144

Client Identifier: IVY HOUSE P7

Grid references/coordinates: Not Supplied

Description: pond water samples in preservative

Condition on Receipt: Good

Date of Receipt : 22/04/2026

Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	30/04/2026
Degradation Control [§]	Within limits	Real Time PCR	30/04/2026
Great Crested Newt*	0 of 12 (negative)	Real Time PCR	30/04/2026
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:

01/05/2026

Date of issue:

01/05/2026

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:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



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Sample ID: ADAS-7185

Client Identifier: IVY HOUSE P2

Grid references/coordinates: Not Supplied

Description: pond water samples in preservative

Condition on Receipt: Good

Date of Receipt : 22/04/2026

Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	29/04/2026
Degradation Control [§]	Within limits	Real Time PCR	29/04/2026
Great Crested Newt*	12 of 12 (positive)	Real Time PCR	29/04/2026
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:

01/05/2026

Date of issue:

01/05/2026

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:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



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Sample ID: ADAS-7190

Client Identifier: IVY HOUSE P1

Grid references/coordinates: Not Supplied

Description: pond water samples in preservative

Condition on Receipt: Good

Date of Receipt : 22/04/2026

Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	30/04/2026
Degradation Control [§]	Within limits	Real Time PCR	30/04/2026
Great Crested Newt*	12 of 12 (positive)	Real Time PCR	30/04/2026
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:

01/05/2026

Date of issue:

01/05/2026

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:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



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Sample ID: ADAS-7348

Client Identifier: IVY HOUSE P8 Grid references/coordinates: Not Supplied

Description: pond water samples in preservative Condition on Receipt: Good

Date of Receipt : 22/04/2026 Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	30/04/2026
Degradation Control [§]	Within limits	Real Time PCR	30/04/2026
Great Crested Newt*	0 of 12 (negative)	Real Time PCR	30/04/2026
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: 01/05/2026 Date of issue: 01/05/2026

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:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



RSK ADAS Ltd
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

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

www.adas.uk

Sample ID: ADAS-7086

Client Identifier: Ivy House -P5

Grid references/coordinates: Not Supplied

Description: pond water samples in preservative

Condition on Receipt: Good

Date of Receipt : 20/04/2026

Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	24/04/2026
Degradation Control [§]	Within limits	Real Time PCR	24/04/2026
Great Crested Newt*	3 of 12 (positive)	Real Time PCR	24/04/2026
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:

24/04/2026

Date of issue:

24/04/2026

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:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



RSK ADAS Ltd
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

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

www.adas.uk

Sample ID: ADAS-7088

Client Identifier: Ivy-House P3

Grid references/coordinates: Not Supplied

Description: pond water samples in preservative

Condition on Receipt: Good

Date of Receipt : 20/04/2026

Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	23/04/2026
Degradation Control [§]	Within limits	Real Time PCR	23/04/2026
Great Crested Newt*	0 of 12 (negative)	Real Time PCR	23/04/2026
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:

24/04/2026

Date of issue:

24/04/2026

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:
Ivy House, Bill Jeffries, Alca Ecology
1040091-Alca-BJ, Ivy House, version 1



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Tel: 01159 229249
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Sample ID: ADAS-7196

Client Identifier: Ivy-House-P6

Grid references/coordinates: Not Supplied

Description: pond water samples in preservative

Condition on Receipt: Medium Sediment

Date of Receipt : 20/04/2026

Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control [†]	2 of 2	Real Time PCR	23/04/2026
Degradation Control [§]	Within limits	Real Time PCR	23/04/2026
Great Crested Newt*	9 of 12 (positive)	Real Time PCR	23/04/2026
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:

24/04/2026

Date of issue:

24/04/2026

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.

Appendix 1: Interpretation of results

Sample Condition

Upon sample receipt we score your samples according to quality: good, low sediment, medium sediment, high sediment, white precipitate, and presence of algae.

There are three reasons as to why sediment should be avoided:

1. It is possible for DNA to persist within the sediment for longer than it would if it was floating in the water which could lead to a false positive result i.e. in this case GCN not recently present but present a long time ago
2. In some cases sediment can cause inhibition of the PCR analysis used to detect GCN eDNA within samples which could lead to an indeterminate result.
3. In some cases sediment can interfere with the DNA extraction procedure resulting in poor recovery of the eDNA which in turn can lead to an indeterminate result.

Algae can make the DNA extraction more difficult to perform so if it can be avoided then this is helpful.

Sometimes samples contain a white precipitate which we have found makes the recovery of eDNA very difficult. This precipitate can be present in such high amounts that it interferes with the eDNA extraction process meaning that we cannot recover the degradation control (nor most likely the eDNA itself) at sufficient levels for the control to be within the acceptable limits for the assay, therefore we have to classify these type of samples as indeterminate.

What do my results mean?

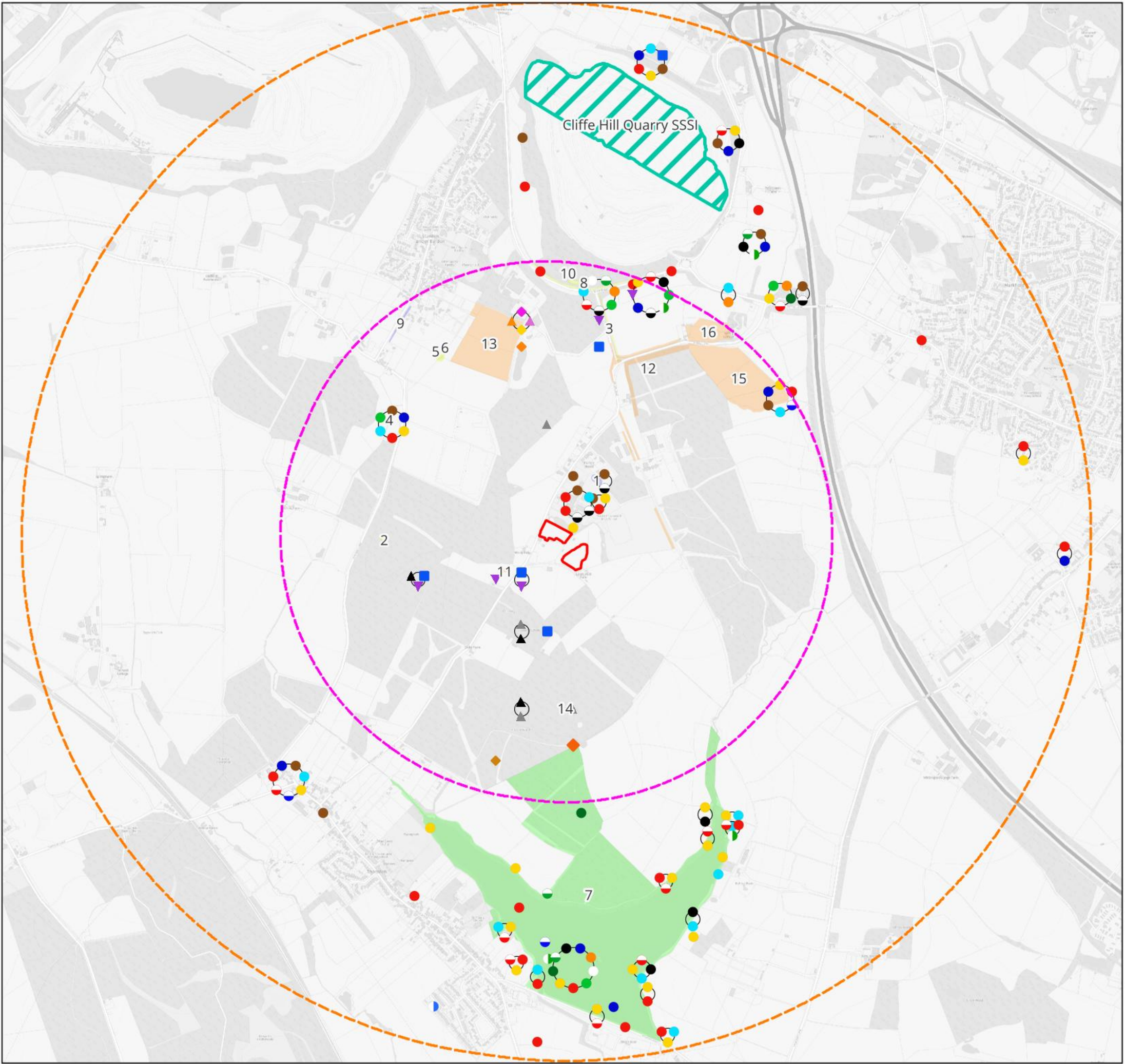
A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

A negative result means that DNA from the great crested newt has not been detected in your sample.

On occasion an inconclusive result will be issued. This occurs where the DNA from the great crested newt has not been detected but the controls have indicated that either: the sample has been degraded and/or the eDNA was not fully extracted (poor recovery); or the PCR inhibited in some way. This may be due to the water chemistry or may be due to the presence of high levels of sediment in samples which can interfere with the DNA extraction process. A re-test could be performed but a fresh sample would need to be obtained. We have successfully performed re-tests on samples which have had high sediment content on the first collection and low sediment content (through improved sample collection) on the re-test. If water chemistry was the cause of the indeterminate then a re-test would most likely also return an inconclusive result.

The results will be recorded as indeterminate if the GCN result is negative and the degradation result is recorded as:

1. evidence of decay - meaning that the degradation control was outside of accepted limits
2. evidence of degradation or residual inhibition - meaning that the degradation control was outside of accepted limits but that this could have been due to inhibitors not being removed sufficiently by the dilution of inhibited samples (according to the technical advice note)



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Key

- | | |
|-----------------|---------------------|
| Site Boundary | Polecat |
| 2km Buffer | Red-throated Diver |
| 1km Buffer | Serotine |
| LWS (Historic) | Smooth Newt |
| LWS (Candidate) | Soprano Pipistrelle |
| LWS (Notified) | Whiskered Bat |
| LWS (Potential) | Daubenton's Bat |
| SSSI | Fieldfare |
- Protected Species**
- | | |
|------------------------------|-------------------------|
| Badger | Grass Snake |
| Barn Owl | Kingfisher |
| Bat | Nathusius's Pipistrelle |
| Bluebell | Red Kite |
| Brown Long-eared Bat | Redwing |
| Common Frog | Water Vole |
| Common Pipistrelle | Barbastelle |
| Common Toad | Firecrest |
| Great Crested Newt | Greylag Goose |
| Leisler's Bat | Natterer's Bat |
| Little Ringed Plover | Nyctalus Bat species |
| Myotis Bat species | Hobby |
| Noctule | Purple Emperor |
| Otter | Brandt's Bat |
| Palmate Newt | Crossbill |
| Peregrine | Eurasian Serotine |
| Unidentified Pipistrelle Sp. | Whiskered/Brandt's Bat |

client
Heath Cade

project name
Ivy House Farm,
Markfield

title
Desk Study Plan

title
FIGURE 1



date
25/06/26

drawn by
BRJ

scale
1:15,000 @ A3

rev
—





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Key

Site Boundary

250m Buffer

Ponds

GCN Present

GCN Absent

Dry

client
Heath Cade

project name
Ivy House Farm,
Markfield

title
Pond Plan

title
FIGURE 2

ALCA
ecology

date
22/07/26

drawn by
BRJ

scale
1:2,500 @ A3

rev
—



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Key

Site Boundary

Habitats Baseline

Bramble scrub

Building

Modified grassland

Tall forbs

Hedgerow Baseline

Native hedgerow

Native hedgerow with trees

Tree categorised as FAR

Fence

client
Heath Cade

project name
Ivy House Farm,
Markfield

title
Baseline Habitats Plan

title
FIGURE 3

ALCA
ecology

date
22/07/26

drawn by
BRJ

scale
1:1,000 @ A3

rev
—

