

Great Crested Newt eDNA Sampling

Survey site:

Markfield Road, Ratby, Leicester, LE6 0LU

Client:

Ryan Pasch

Survey date:

2nd June 2025

Project:

This report is prepared to inform a planning application with the Hinckley and Bosworth Borough Council. The proposal is described as: to create a small intimate glamping retreat.

Survey methodology and legislation can be found in Appendix 4

The site survey was undertaken by Millie Holland BSc (Hons), MSc, Consultant (Accredited Agent on Natural England Bat Licence Number: 2018-33540-CLS-CLS)					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (mph)	Rain
02/06/2025	22	65	0	0	None

Ecological Survey Factor	Detailed using desk study and site survey (carried out under good weather conditions). Any specific limitations noted within relevant section. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the lead surveyor for advice.
Conclusion, Impact or Recommendations	
See habitat map in appendix 1, location plan in appendix 2, and eDNA results in appendix 3.	
Scope of report	This report describes the suitability of the habitats on the site and any surveyed ponds for GCN and identifies the presence or absence of GCN in these ponds. It identifies possible constraints in relation to GCN as a result of the proposed development and summarises the requirements for further surveys and mitigation measures to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation. To achieve this, the following steps have been taken: • A field survey has been undertaken, including an assessment of the suitability of the site and any ponds within influencing distance of the site for GCN. • An outline of potential impacts on GCN has been provided, based on the proposed development. • Recommendations for further surveys and mitigation have been made, along with advice on the requirements for a European Protected Species Licence (EPSL) for GCN if appropriate. Opportunities for the enhancement of the site for GCN have been set out.
Site location and context	The survey site is centred on National Grid Reference SK 4907 3047 and has an area of approximately 0.4ha. The site is a smaller area of a larger owned boundary. The site consists of woodland, artificial unsealed, unvegetated surface, and grassland. The site is immediately surrounded by agricultural land, campsites and pockets of woodland. The wider landscape consists of further

	agricultural land, woodland, residential properties and the M1. The closest water way is the pond within the owned boundary of the site.
<i>Field survey results</i>	Pond descriptions A review of Ordnance Survey and aerial imagery identified seven ponds within 500 m of the site boundary: • Pond 1 (P1) – ~70 m southeast • Pond 2 (P2) – ~110 m southwest • Pond 3 (P3) – ~300 m south • Pond 4 (P4) – ~350 m southeast • Pond 5 (P5) – ~350 m north • Pond 6 (P6) – ~370 m south • Pond 7 (P7) – ~470 m south None of these ponds were subject to direct survey. While Ponds 1 and 4 are connected to the site via narrow hedgerow corridors, both are surrounded by more optimal habitats, such as adjacent woodland, which are likely to support local populations of great crested newt (GCN) without necessitating dispersal toward the site. Therefore, the likelihood of GCN traversing the suboptimal habitat matrix to reach the site is considered low. Pond 5 is separated from the site by the M1 motorway, which constitutes a significant dispersal barrier due to its width and consistent high traffic volume. This effectively eliminates any functional ecological connectivity for GCN between Pond 5 and the site. The remaining ponds (Ponds 2, 3, 6, and 7) are separated from the site by a combination of intensively managed agricultural land, residential development, and commercial infrastructure. These land uses offer little to no suitable terrestrial habitat and lack the structural connectivity (e.g. hedgerows, rough grassland) needed for GCN to disperse safely or avoid predation. In

addition, routine land management practices within these areas likely pose a further barrier or mortality risk to any potential GCN attempting to move through the landscape.

Full pond descriptions are provided in Table 1 below.

Table 1: Surveyed Ponds

Pond Ref	Description	Photograph
1	Pond 1 is a long round pond located within the owned boundary and immediately north of the proposed development site. During the survey the pond contained deep, rather turbid water. Approximately 60% of the waters edge was assible during the site survey, the other areas had large areas of reedd, bushes and trees. The banks are shallow, with vegetation coveraging them. During the site survey large koi fish, and smaller stickleback fish were observed within the water – revealing quite a large population.	

Habitat Suitability Index (HSI) Assessment

Pond 1 was assessed for its suitability to support GCN using the Habitat Suitability Index (HSI) Assessment Methodology (Oldham et al, 2000). Ponds 2-7 could not be accessed due to being on third party land.

HSI is a standard measure of calculating the suitability of a pond to support breeding great crested newts, based on an assessment of 10 characteristics (indices), including size, shading, depth and vegetation profile. The assessment generates a number between 0 and 1 for each of the indices which are combined to provide an overall assessment of a pond's suitability

to support GCN on a categorical scale (Table 2). The assessment has not been designed for or tested on other waterbodies such as ditches. HSI assessment results are provided in Table 3 below.

Table 2: HSI Suitability Scores

HSI Score	Suitability	Predicted GCN Occupancy of Ponds in each Category
<0.5	Poor	3%
0.5 to 0.59	Below Average	20%
0.6 to 0.69	Average	55%
0.7 to 0.79	Good	79%
>0.8	Excellent	93%

A Habitat Suitability Index (HSI) assessment was completed for the pond using the criteria set out in ARG UK's Great Crested Newt Habitat Suitability Index (Advice Note 5). The resulting HSI score was 0.40, categorising the pond as having 'Poor' suitability for supporting great crested newts (*Triturus cristatus*). While some parameters were favourable—such as location (1.00), pond area (0.80), low risk of drying (0.90), and optimal shade (1.00)—several key factors limited the overall suitability. Notably, water quality (0.33) and macrophyte cover (0.30) were low, indicating poor aquatic habitat structure. The presence of fish (0.01) further reduces the pond's suitability for breeding, and terrestrial habitat quality (0.33) was also poor, offering limited opportunities for foraging and shelter. Although the pond is within a wider landscape containing other waterbodies (0.70) and had only moderate levels of waterfowl (0.67), these were not sufficient to outweigh the negative indicators. As such, the pond is considered unlikely to support a viable population of great crested newts.

Table 3: HSI Assessment Results

SI Description	P1
Geographic location	1.00

Pond Area	0.80
Pond permanence	0.90
Water quality	0.33
Shade	1.00
Waterfowl effect	0.67
Fish presence	0.01
Pond Density	0.70
Terrestrial habitat	0.33
Macrophyte cover	0.30
HSI score	0.40
HSI category	Poor

eDNA Sampling

Sample kits and analysis was provided by SureScreen. Sampling followed the relevant sections of the method set out in the DEFRA funded study endorsed by Natural England (Biggs et al 2014). In summary the sampling protocol is as follows:

- 20 samples were taken from around the entire perimeter of the waterbody.
- The surveyor stayed out of the water while taking the samples (extension poles were used in situations where open/sufficiently deep water was at a distance from the dry banks.
- Survey locations were distributed around the pond perimeter but micro-siting was used to select locations most likely to be used by GCN.
- At each sample location the water column was stirred prior to taking the sample but care was taken to avoid disturbing the sediment on the base of the pond.
- Once all 20 samples were taken, 15ml of the total sample were pipetted into each of the 6 sampling tubes, whilst ensuring that the water in the sample bag was mixed before taking each 15ml sample and that only one sample tube was opened at any one time.

	At all times the surveyor ensured that the risk of contaminating the sampling equipment was minimised by avoiding the placement of the ladle or pipette on the ground or on any otherwise potentially contaminated surfaces and by changing gloves between the initial sampling stage and the pipetting stages of the method. Samples were sent to SureScreen for analysis. Full eDNA results are provided in Table 4. The SureScreen lab results are included in Appendix 3. <i>Table 4: eDNA Survey Results</i> <table> <tr> <th>Pond Ref</th><th>eDNA Result</th></tr> <tr> <td>1</td><td>Negative (0/12)</td></tr> </table>	Pond Ref	eDNA Result	1	Negative (0/12)
Pond Ref	eDNA Result				
1	Negative (0/12)				
<i>Foreseen Impacts</i>	Pond 1 will be retained in the development, areas of grassland will be removed in the development.				
<i>Recommendations</i>	Owing to the negative result of the eDNA testing and green risk score within the rapid risk assessment, GCN licencing is considered to be disproportionate. A precautionary working method will be implemented during construction, including the following measures: - A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 15cm and left overnight to allow any amphibians to disperse. The vegetation can then be cleared to ground level and must be maintained at this level for the duration of construction to deter amphibians from the working area. - Best practice pollution prevention measures will be implemented to minimise impacts to nearby aquatic habitats that amphibians could use. - Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. - If any common amphibians are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance.				

	• In the unlikely event that a great crested newt is identified, works must cease and advice must be sought from a suitably qualified ecologist.
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Appendix 1: Survey map



Appendix 2: Location map



Appendix 3: eDNA results

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GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
GCN25 7050	Markfield Road - P1	SK 49226 07523	Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Amy Bermudez

Approved by: Lauryn Jewkes

Appendix 4: Legislation and planning policy

LEGAL PROTECTION

The great crested newt receives full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

This species are also listed on Schedule 5 of the Wildlife and Countryside Act and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

NATIONAL PLANNING POLICY

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places of great crested newts protected. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

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