

Unsworth Cricket Club

Great Crested Newt eDNA Survey

Technical Note

2026



RACHEL
HACKING
ECOLOGY

Client Ashton Hale on behalf of On Padel
Project Title Unsworth Cricket Club
Project Reference RHE.4701
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Introduction

Rachel Hacking Ecology Ltd was commissioned in 2026 by Ashton Hale on behalf of On Padel to undertake a Great Crested Newt *Triturus cristatus* (GCN) eDNA survey of six ponds within 250m of Unsworth Cricket Club, hereafter referred to as the 'site'.

The site will be the subject of a planning application for five new padel courts. The ponds subject to survey are outside of the site boundary but are within 250m of the site (see Figure 1), and therefore eDNA surveys have been recommended to consider impacts to GCN. There are a further four ponds within 250m of the site however these have been scoped out of assessment as they lie beyond the M66, which acts as a major ecological barrier.

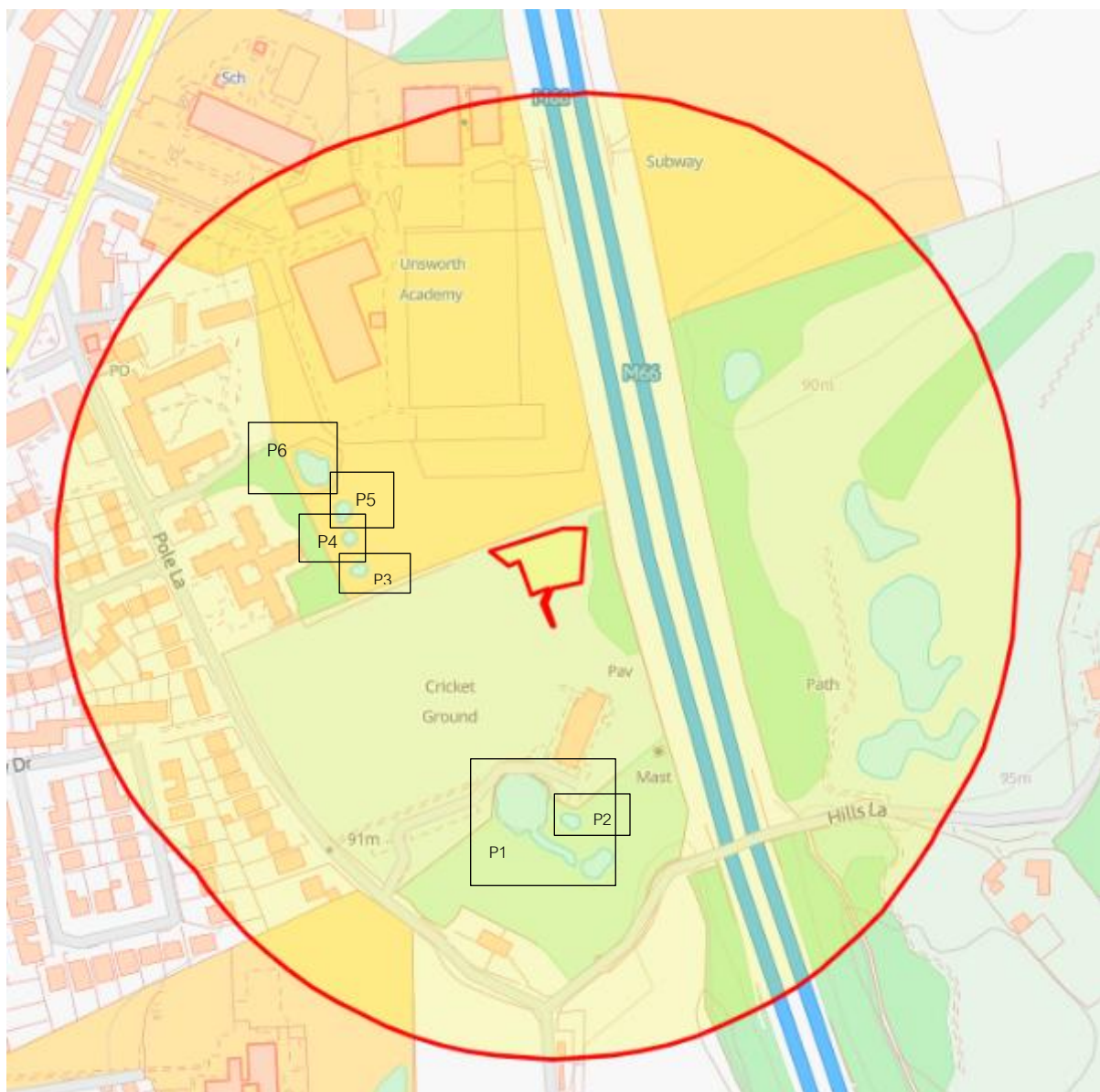


Figure 1: Ponds within 250m of the site (Background imagery courtesy of MAGIC Maps).

Legal Context

European Protected Species (EPS), such as Great Crested Newt, are protected by the Wildlife and Countryside Act 1981 (as amended by the CROW Act 2000) and the Conservation of Habitats and Species Regulations 2017. The Acts make it an offence to:

- Deliberately capture, injure or kill an EPS;
- Deliberately impair an EPS's ability to survive, breed, reproduce, rear or nurture young; to hibernate or migrate; or significantly affect the local distribution or abundance of the EPS.
- Possess or control live or dead EPS or any part of, or anything derived from a EPS;
- Damage or destroy a breeding site or resting place of an EPS;
- Intentionally or recklessly obstruct access to any place that is used for shelter or protection by an EPS;
- Intentionally or recklessly disturb a structure or place that it uses for shelter or protection that is occupied by an EPS.

Methodology

All ponds were sampled on 22nd April 2026 in accordance with the standard methodology¹. The samples were sent to an approved laboratory for analysis.

Results

Pond 1

Pond 1 is an large elongated waterbody, comprising two distinct pools connected by a deep channel filled with standing water. The marginal vegetation includes Crack Willow *Salix fragilis*, Hawthorn *Crataegus monogyna* and Soft Rush *Juncus effusus*. The inundation vegetation includes Bulrush *Typha latifolia*, Horsetail *Equisetum* spp., Broadleaved Dock *Rumex obtusifolius*, Water Mint *Mentha aquatica*, Willowherb *Epilobium* spp. and Common Reed *Phragmites australis*. Evidence of breeding GCN was confirmed by leaf search during the survey (see figure 2), therefore this pond was not sampled for eDNA.

¹ Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R. A., Foster, J., Wiilkinson, J., Arnett, A., Williams, P., & Dunn, F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt Defra Project WC1067 Appendix 5. Oxford: Freshwater Habitats Trust.



Figure 2. GCN egg identified in Pond 1.



Figure 3. Northern end of Pond 1.



Figure 4. Southern end of Pond 1.



Figure 5. Connection between the two pools.

The pond has an HSI score of 0.89 meaning it has excellent suitability for GCN. As mentioned, GCN eggs were identified within the pond during the survey.

Pond 2

Pond 2 is a small, circular waterbody, situated within a wooded area. The water column is turbid, and the pond bed is characterised by a substantial layer of detritus. The marginal vegetation is limited, comprising Soft Rush and Horsetail, while mature willow trees provide shading around the pond margins.



Figure 6. Pond 2.

The pond has an HSI score of 0.69 meaning it has average suitability for GCN. The eDNA test returned a negative result.

Pond 3

Pond 3 is a small, circular waterbody situated in a wooded area, north of Unsworth Cricket Club. The pond appears man-made and the water column is turbid. The marginal vegetation is of low diversity, comprising overhanging Goat Willow and a small number of Willowherb plants. Invasive Himalayan Balsam *Impatiens glandulifera* was also present around the pond margins.



Figure 7, Pond 3.

The pond has an HSI score of 0.80 meaning it has excellent suitability for GCN. The eDNA test returned a negative result.

Pond 4

Pond 4 is a small circular waterbody and appears man-made, very similar to that of Pond 3. The marginal vegetation is limited, comprising Bulrush. Limited shading is provided by Willow trees present around the pond margins. The water column is turbid, and a substantial layer of detritus is present across the pond bed.



Figure 8, Pond 4.

The pond has an HSI score of 0.86 meaning it has excellent suitability for GCN. The eDNA test returned a positive result.

Pond 5

Pond 5 is a small circular waterbody and appears man-made, again similar to Ponds 3 and 4. The marginal vegetation is very limited, and comprises minimal amounts of Bulrush and Soft Rush. Shading is provided by Willow trees present around the pond margins. The water column is turbid, and a substantial layer of detritus is present across the pond bed.



Figure 9, Pond 5.

The pond has an HSI score of 0.83 meaning it has excellent suitability for GCN. The eDNA test returned a positive result.

Pond 6

Pond 6 is a large waterbody and is semi wooded. The emergent vegetation includes Bulrush, Soft Rush, Willowherb and immature Willow saplings. Due to dense Bramble *Rubus fruticosus* agg scrub surrounding the pond margin, only 50% was accessible for eDNA sampling.



Figure 10, Pond 6.

The pond has an HSI score of 0.86 meaning it has excellent suitability for GCN. The eDNA test returned a positive result.

Potential Impacts and Mitigation

The results confirm that GCN are present within the area and that the population is breeding in ponds within 250m of the application site (Pond 1, Pond 4, Pond 5 and Pond 6).

The proposed development is expected to result in the removal of 0.12ha of short, regularly mown modified grassland and 0.07ha of tall forbs, of which only tall forbs would be suitable for sheltering habitat for amphibians. The development would not impact any breeding habitat (ponds), and given its small scale, would not adversely impact potential GCN dispersal/movement corridors. Figure 11 shows the grassland within which the application site falls (below).



Figure 11: The grassland within the application site.

The risk of incidental harm to individual newts which may traverse across the application site during the construction period should be mitigated for by adoption of Precautionary Working Methods as follows:

- All grassland habitats within the application site must be kept short by regular mowing, as would ordinarily be the case for the land surrounding the cricket pitch.
- No night time construction working is to be undertaken.
- Any excavations should be ramped to ensure amphibians are not accidentally trapped.
- Storage of materials, soils and turf must be kept off the ground on wooden pallets to avoid GCN using them for shelter.
- In the unlikely event that a GCN is encountered work will need to stop immediately and the advice of a Suitably Qualified Ecologist be sought immediately. Do not move or disturb the GCN and replace the material that the GCN was taking refuge under. Work will only re-start if there is no risk of disturbance, harm, or injury to GCN and the work will not cause damage or loss of GCN habitat. If there is any risk of committing an offence it is likely that work will need to stop until appropriate licensing is obtained.

As a result of the very minor loss of potentially supporting habitat (tall forbs), and the separation distance between this habitat and the ponds (>100m) confirmed to support GCN, it is not considered that there would be material adverse impact to GCN habitat. Incidental harm to GCN individuals which may occasionally disperse across the development site (especially on wet evenings) would be controlled via the adoption of the Reasonable Avoidance Measures etc as set out above. Accordingly, there would be no legal breach and no detriment to the populations of GCN which breed within the nearby ponds, hence a Mitigation Licence is not required.

It may be necessary for the Reasonable Avoidance Measures to be secured by planning condition, requiring a Precautionary Working Method Statement (PWMS) to be produced, to the satisfaction of the LPA in advance of commencement of works.



Appendix 1: eDNA Analysis Results



Folio No: 728-2026
Purchase Order: PO 7183-1011
Contact: Rachel Hacking Ecology Ltd
Issue Date: 28.04.2026
Received Date: 23.04.2026

GCN Report

Technical Report



SureScreen Scientifics

Folio No: 728-2026
Purchase Order: PO 7183-1011
Contact: Rachel Hacking Ecology Ltd
Issue Date: 28.04.2026
Received Date: 23.04.2026

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
GCN26 01211	Unsworth Cricket Club - Pond 3		Pass	Pass	Negative	0/12
GCN26 01213	Unsworth Cricket Club - Pond 2		Pass	Pass	Negative	0/12
GCN26 01214	Unsworth Cricket Club - Pond 5		Pass	Pass	Positive	10/12
GCN26 01215	Unsworth Cricket Club - Pond 4		Pass	Pass	Positive	9/12
GCN26 01222	Unsworth Cricket Club - Pond 6		Pass	Pass	Positive	11/12

Matters affecting result: none

Reported by: Ruby Fielding

Approved by: Vanessa Hind

Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

Interpretation of Results

Sample Integrity Check:

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.

Degradation Check:

Pass/Fail. Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

Inhibition Check:

Pass/Fail. The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result:

Presence of GCN eDNA (Positive/Negative/Inconclusive)

Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.

Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.

Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

Inconclusive: Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.

