



GREAT CRESTED NEWT EDNA REPORT

Kingscote, East Grinstead

On behalf of: Paw Paddock Ltd

Client:	Paw Paddock Ltd			
Project:	Kingscote, East Grinstead			
Reference:	LLD3492-ECO-REP-004-00-eDNA			
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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

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SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Paw Paddock Ltd to undertake amphibian surveys of ponds adjacent to land at Kingscote, East Grinstead (located around central grid reference: TQ 36747 35304 – hereafter referred to as ‘the site’)

3no. ponds (P1, P2 and P3) were identified within 250m the site by the desk study, with a further pond (P4) located 420m away.

Pond P2 was found to be competently dry and therefore was discounted from further survey. Ponds P1 and P3 were subject to eDNA survey, with water samples collected on the 17th of April 2025 before analysis by SureScreen Scientifics.

Analysis of the samples indicated the likely absence of great crested newts within the on-site ponds therefore no specific mitigation measures with regards this species is required.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned to undertake great crested newt (GCN) surveys to inform the proposed development of the Kingscote, East Grinstead (*Grid Reference: TQ 36747 35304 – hereafter referred to as 'the site'*).

Survey Rationale

- 1.2 Surveys were recommended following the original ecology survey completed by this company in March 2025, which identified 3no. ponds within 250m of the proposed construction zone. A further pond (P4) was noted 420m north-west, however this was discounted from further survey on account of the intervening distance and lack of connectivity between the site and P4.
- 1.3 The site consists of modified grassland, surrounded by hedgerow and woodland.
- 1.4 Although the modified grassland within the site offers sub-optimal terrestrial habitat, proposals could impact great crested newts commuting between ponds in the wider landscape. The potential for adverse impacts was heightened by the proximity of P1 (located 60m away). Further survey work to assess the potential impacts upon this species was therefore undertaken to rule out the presence of great crested newts within these ponds.

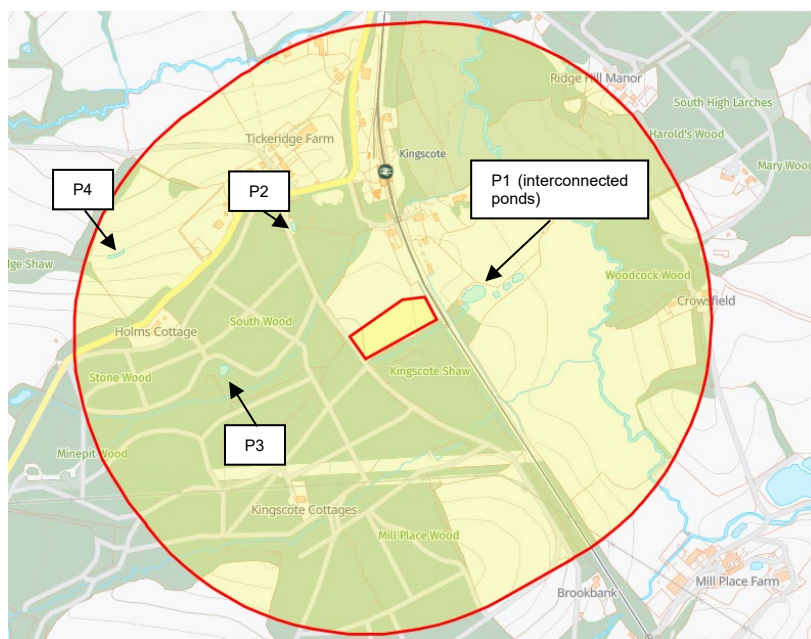


Image 01 – Location of ponds within 500m of the site.

Site Information

- 1.5 The site covers an area of c. 1.1 hectares (ha) and consists of a roughly rectangular shaped plot within the southern end of a field, comprised entirely of modified grassland. Immediately adjacent to the western and southern boundaries of the site is a native hedgerow, with an unregistered accessway road running parallel to the western hedgerow, separating the site from ancient woodland, and a dry drainage ditch running alongside the southern hedgerow. Immediately south of the southern hedgerow is another area of ancient woodland called Kingscote Shaw, which includes a section of bramble scrub and a small stream running close to the site boundary.

Surrounding Landscape

- 1.6 The site is located within a rural setting near Kingscote Station, West Sussex, with the settlements of Crawley Down and East Grinstead located c. 3km north-west and north-east respectively. The surrounding landscape is dominated by woodland and arable land connected by a network of hedgerows and streams, with a small number of residential and farm dwellings interspersed throughout.

Development Proposals

- 1.7 It is understood that the proposals are for the creation of an exclusive, enclosed and secure dog walking area.

Aims

- 1.8 The aim of the amphibian and great crested newt survey was;
- *To identify presence / absence of amphibians (including great crested newt (GCN) within the water bodies identified within 500.0m of the site.*

2.0 LEGISLATION

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

- *The Conservation of Habitats and Species Regulations 2017 (as amended).*
- *The Wildlife and Countryside Act 1981 (as amended).*
- *The Natural Environment and Rural Communities (NERC) Act 2006.*

2.2 The great crested newt is included on *Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended)* and *Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)* which makes it an offence, amongst other things, to deliberately capture, injure, kill or disturb any such species. In addition, this notification also prohibits the deliberate taking or destroying of any eggs and the damaging, destroying or blocking access to a breeding site or resting place of any such species.

2.3 This species is also a target of UK and Local Biodiversity Action Plans and listed as *Species of Principle Importance under Section 41 of the Natural Environment and Rural Communities Act 2006*. Local Authorities are obliged to have regard to the purpose of conserving biodiversity with particular emphasis on targeted species.

2.4 In addition, the National Planning Policy Framework (NPPF) 2021 sets out the government planning policies for England and how they should be applied. '*Chapter 15: Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*'

3.0 METHODOLOGY

3.1 Desk Study

- 3.1.1 The Multi-Agency Geographical Information Centre (*MAGIC*) was consulted for information regarding granted EPS licences within 2.0km, and location of ponds within 500.0m radius of the proposed construction site.

3.2 HSI Assessment

- 3.2.1 The waterbodies within 500.0m of the site (*where access allowed*), were subject to a HSI assessment in March 2025.
- 3.2.2 The *Habitat Suitability Index (HSI)* was developed by *Oldham et al (2000)* as a way of providing a numerical index allowing a direct comparison to be made between different water bodies. This index assesses ponds against ten different criteria, each of which have a bearing on the likelihood of great crested newts (*GCN*) being present in the pond under consideration.
- 3.2.3 The ten attributes against which ponds are assessed are:
- *Geographic Location.*
 - *Pond Area (at its highest water level).*
 - *Permanence.*
 - *Water Quality.*
 - *Perimeter Shading.*
 - *Numbers of Wildfowl.*
 - *Numbers of Fish Present.*
 - *Pond Count (within a 1.0km radius).*
 - *Terrestrial Habitat (within 250.00m).*
 - *Macrophyte Coverage.*
- 3.2.4 The HSI results in a score between 1 and 0; with 1 being optimal conditions and 0 being unlikely to support a population. However, the index merely gives an indication as to whether a pond has the potential to support GCNs and is not a substitute for more detailed presence / absence surveys for protected species of amphibian. The evaluation criteria is shown in *Table No. 01* below.

Table No. 01 – HSI Evaluation Criteria

HSI Score	Pond Suitability
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

3.3 eDNA Survey

- 3.3.1 An eDNA survey of P1 and P3 was completed on the 17th of April 2025. Pond P2 was found to be competently dry and therefore was discounted from further survey.
- 3.3.2 20no. water samples were collected from the margin of each pond, with samples spaced as evenly as possible to collect a representative sample. All samples were collected using a sterile sampling kit as supplied by SureScreen Scientifics.
- 3.3.3 Each sample was stored in a refrigerator before return to SureScreen Scientifics for analysis. The results of the survey indicate the presence of absence of great crested newt environmental DNA within the water body.

4.0 RESULTS

4.1 Desk Study

- 4.1.1 SxBRC returned 1no. record for great crested newt *Triturus cristatus* from within the search area, which pertained to a pond survey conducted in 2014, for a pond centered c. 1.6km north-east of site, whereby GCN eggs were observed within a pond in an area of woodland near East Grinstead Sports Club.

4.2 HSI Assessment

- 4.2.1 Ponds P1, P2 and P3 were assessed as part of the Preliminary Ecological Appraisal in March 2025 (for full details refer to LLD3492-ECO-REP-001-00-PEA). The HSI assessment found P1 and P3 to offer excellent habitat suitability, while P2 was assessed as offering poor suitability.

4.3 eDNA Survey

- 4.3.1 Each pond was negative for great crested newt environmental DNA, suggesting the absence of GCN within the waterbody.

4.4 Survey Constraints / Considerations

- 4.4.1 All phase 2 surveys were undertaken at the appropriate time of the year by trained, licenced surveyors. There were no constraints recorded relating to survey methodology, therefore the results are considered to a true representation of conditions on site.
- 4.4.2 P2 was dry at the time of the eDNA survey and could therefore not be sampled. There is a low risk that GCN may utilise this waterbody when it contains water, however given the very low water level recorded in March (after a period of wet weather) and poor habitat suitability, the pond is very unlikely to support a viable breeding population.

5.0 CONCLUSION

- 5.1 Great crested newts were found to be absent from all ponds within a commutable distance of the site, therefore no specific mitigation with regards this species is required.

6.0 REFERENCES

- *English Nature (2001) Great Crested Newt Mitigation Guidelines, English Nature.*
- *Froglife (2001) Great Crested Newt Conservation Handbook. Froglife.*
- *Joint Nature Conservation Committee, (1998) Herpetofauna Workers' Manual. JNCC, Peterborough.*
- *Natural England (2015) Template for Method Statement to support application for licence under Regulation 53(2)e of The Conservation of Habitats and Species Regulations 2010 (as amended) in respect of great crested newts (Triturus cristatus). Form WML-A14-2 (Version December 2015).*

Appendix A – eDNA Results

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GCN Report

Technical Report



SureScreen Scientifics

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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 2342	Kingscote Pond 3	TQ 36445 35210	Pass	Pass	Negative	0/12
GCN25 2343	Kingscote Pond 1	TQ 36874 35329	Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Chelsea Warner

Approved by: Lauryn Jewkes

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.

