

Great Crested Newt eDNA Sampling

Survey site:

Land at Kithurst Lane, Storrington, Pulborough RH20 4LP

Client:

Philip Orpwood

Norbertine Order

Survey date:

28th April 2025

Project:

This report is prepared to inform a planning application with the Horsham District Council. The proposal is described as: “The erection of one dwelling on site one and erection of six-eight affordable dwellings on site two”

Survey methodology can be found on page 4 and legislation can be found in Appendix 5.

Ecological Survey Factor Conclusion, Impact or Recommendations	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.
See pond plan map in appendix 1, location plan in appendix 2, proposal plans in appendix 3, eDNA results in appendix 4 and legislation in appendix 5.	
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 the pond within 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 site is located on the southern edge of the town of Storrington, centred on National Grid Reference TQ 08209 13982 with an area of approximately 0.3 hectares. The site is comprised of modified grassland habitat with hedgerow and scattered trees. It is surrounded by residential properties to the north and west, and a mix of woodland and farmland to the south and east. A cemetery lies immediately adjacent to the east, surrounded by hedgerow. The site is well connected to residential properties, woodland habitat, farmland and other habitats by an extensive network of hedgerows.
Field survey results	Great crested newts exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; great crested newts are typically found within terrestrial habitats up to 500m from breeding ponds (Langton <i>et al.</i> 2001). There is one pond within the land ownership boundary, which was subject to an eDNA survey.

Pond description A description and photographs of pond survey is provided in Table 1 below. <i>Table 1: Surveyed Pond</i>								
<table><tr><th>Pond Ref</th><th>Description</th><th>Photographs</th></tr><tr><td>1</td><td>The pond measures approximately 200m² and has a small island in the middle, with a timber bridge. The pond is surrounded by good quality terrestrial habitat. The pond is partially shaded, has good macrophyte cover and waterfowl are present.</td><td>  </td></tr></table>			Pond Ref	Description	Photographs	1	The pond measures approximately 200m ² and has a small island in the middle, with a timber bridge. The pond is surrounded by good quality terrestrial habitat. The pond is partially shaded, has good macrophyte cover and waterfowl are present.	
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1	The pond measures approximately 200m ² and has a small island in the middle, with a timber bridge. The pond is surrounded by good quality terrestrial habitat. The pond is partially shaded, has good macrophyte cover and waterfowl are present.							

A review of aerial imagery (MAGIC and OS Maps) indicates the presence of ten ponds within 500m of the site. Of these, only three ponds are located within 250m of the site, one of which was within 100m of the site.

Modified grassland will be lost to facilitate the proposed development. When georeferencing the proposed development plans over scaled mapping of the site, it is noted that the development area is likely to result in the loss or significant disturbance of 0.3ha of modified grassland. If great crested newts are present within the ponds within 500m of the site, this will constitute a loss of 0.3ha within 100m, 250m and over 250m from a potential breeding pond. When completing the rapid risk assessment published by Natural England (Natural England 2015), the proposed development produces an Amber risk score, which states: Offence Likely.

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)	0.1 - 0.5 ha lost or damaged	0
Individual great crested newts	No effect	0
	Maximum:	0.5
Rapid risk assessment result:	AMBER: OFFENCE LIKELY	

If the ponds within 100m of the site are not great crested newt breeding ponds, then the risk to great crested newts reduces to Green, Offence Highly Unlikely.

	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
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	Land >250m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0
	Individual great crested newts	No effect	0
		Maximum:	0.1
	Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

Therefore, the one pond within 100m of the proposed development area was subject to a habitat suitability index assessment and an eDNA survey.

Habitat Suitability Index (HSI) Assessment

The pond was assessed for it’s suitability to support GCN using the Habitat Suitability Index (HSI) Assessment Methodology (Oldham et al, 2000). 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%

Table 3: HSI Assessment Results

SI Description	P1
Geographic location	1
Pond Area	0.1
Pond permanence	1
Water quality	0.67
Shade	1
Waterfowl effect	0.01
Fish presence	0.33
Pond Density	1
Terrestrial habitat	1
Macrophyte cover	0.7
HSI score	0.42
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:

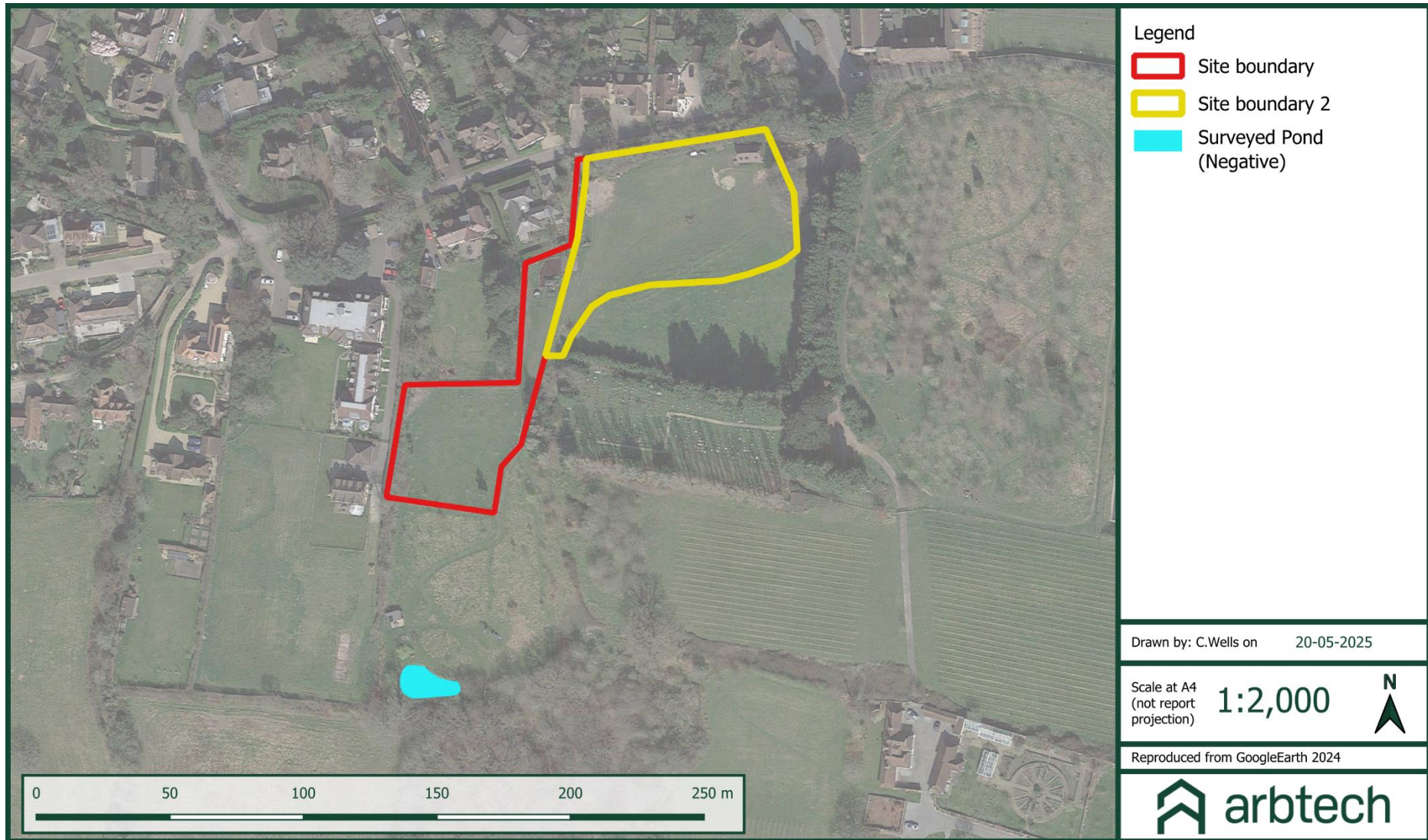
- 20 samples were taken from around the entire perimeter of the waterbody.
- The surveyor stayed out of the water while taking the samples (extension poles were used in situations where open/sufficiently deep water was at a distance from the dry banks.
- Survey locations were distributed around the pond 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 5. <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>	The pond will not be directly impacted by the proposed plans. However, impacts to suitable terrestrial habitats will occur as a result of the works, predominantly comprising the loss and damage of large areas of grassland.				

	When completing the rapid risk assessment published by Natural England (Natural England 2015), the proposed development produces a Green risk score, which states: Offence Highly Unlikely. <table><tr><th>Component</th><th>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)</th><th>Notional offence probability score</th></tr><tr><td>Great crested newt breeding pond(s)</td><td>No effect</td><td>0</td></tr><tr><td>Land within 100m of any breeding pond(s)</td><td>No effect</td><td>0</td></tr><tr><td>Land 100-250m from any breeding pond(s)</td><td>0.1 - 0.5 ha lost or damaged</td><td>0.1</td></tr><tr><td>Land >250m from any breeding pond(s)</td><td>0.1 - 0.5 ha lost or damaged</td><td>0</td></tr><tr><td>Individual great crested newts</td><td>No effect</td><td>0</td></tr><tr><td colspan="2">Maximum:</td><td>0.1</td></tr><tr><td colspan="2">Rapid risk assessment result:</td><td>GREEN: OFFENCE HIGHLY UNLIKELY</td></tr></table> Given this, it is deemed that precautionary working methods are acceptable to ensure risk to amphibians remains at an acceptably low level.	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)	No effect	0	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)	0.1 - 0.5 ha lost or damaged	0	Individual great crested newts	No effect	0	Maximum:		0.1	Rapid risk assessment result:		GREEN: OFFENCE HIGHLY UNLIKELY
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Recommendations	A precautionary working method will be implemented for common amphibians during construction, including the following measures: • Site clearance will be undertaken outside of the amphibian hibernation season (November to February) insofar as is possible. • A toolbox talk will be given to contractors regarding the possible presence of amphibians, including great crested newt, at the site. • A pre-commencement inspection of the site will be undertaken for amphibians. • Any rubble piles will be dismantled by hand and debris and brash will be stored on pallets or removed from the site to prevent amphibians from utilising these areas. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • 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. • The site will be enhanced for amphibians by the addition of a hibernaculum within the patch of woodland
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Appendix 1: Surveyed Pond



Appendix 2: Location map



Appendix 3: Proposed plan

Not available at the time of writing.

Appendix 4: eDNA results

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 2735	RH20 4LP - P1		Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Amy Bermudez

Approved by: Lauryn Jewkes

Appendix 5: 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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