

Great Crested Newt eDNA Sampling

Survey site:

Site Adjacent to 74 Old Shoreham Road, New Monks Farm, Lancing, BN15 9HG

Client:

AY Developers Ltd

Survey date:

30th June 2025

Project:

The survey was required to inform a planning application for the demolition of the existing bungalow at 74 Old Shoreham Road and erection of approximately 10 no. new dwellinghouses with associated access road and parking facilities (hereafter referred to as "the proposed development

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

| Ecological Survey Factor Conclusion, Impact or Recommendations | <p>Detailed using desk study and site survey (carried out under good weather conditions). Any specific limitations noted within relevant section.</p> <p>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.</p> |
|--|--|
| 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. | |
| <i>Scope of report</i> | <p>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.</p> <p>To achieve this, the following steps have been taken:</p> <ul style="list-style-type: none"> • A field survey has been undertaken, including an assessment of the suitability of the site and the ponds within 500m of the site for GCN. • An outline of potential impacts on GCN has been provided, based on the proposed development. • Recommendations for 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. |
| <i>Site location and context</i> | <p>The site is located at National Grid Reference TQ 19063 05592 and has an area of approximately 0.6ha comprising a field of grass and waste land with outbuildings, a bungalow (B1) with associated garden and driveway. It is directly surrounded by residential dwellings to the north and west, a main A-road to the north, construction site and ditches to the east, agricultural fields to the south. The wider landscape comprises agricultural fields to the south, north and east with the town of Lancing to the west. The coast is located ~1680m south of site.</p> |

| | |
|-----------------------------|---|
| Field survey results | <p>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).</p> <p>A drainage ditch is present, bordering the site boundary and was subject to an eDNA survey in 2023 (Arbtech, 2023). The drainage ditch was returned as negative for great crested newts.</p> <p>A review of aerial imagery (MAGIC and OS Maps) indicates the presence of one pond within 500m of the site, located approximately 500m east of the site. This pond was surveyed by Chantae Bleakman-Wells, Consultant Ecologist (Great Crested Newt Licence: 2025-13005-CL08-GCN).</p> |
|-----------------------------|---|

| Table 1: Surveyed Pond | | |
|------------------------|---|--|
| Pond Ref | Description | Photographs |
| 1 | Pond located TQ 19598 05792. The pond is covered with duckweed, and surrounded by vegetation including grassland, reeds and teasel. The ponds has no shade. |    |

Habitat Suitability Index (HSI) Assessment

The ponds were assessed for their 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

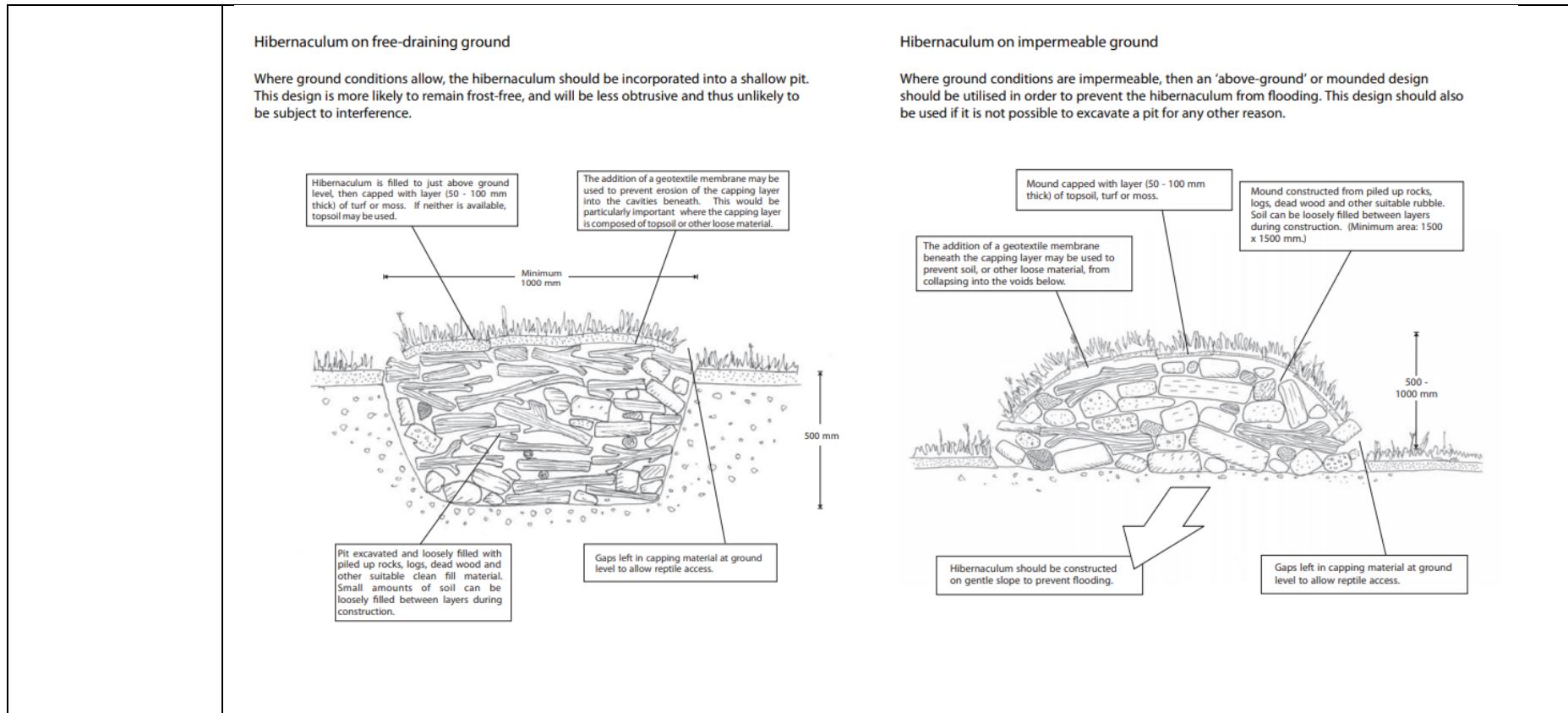
| HSI Score | Suitability | Predicted GCN Occupancy of Ponds in each Category |
|-------------|---------------|---|
| <0.5 | Poor | 3% |
| 0.5 to 0.59 | Below Average | 20% |
| 0.6 to 0.69 | Average | 55% |
| 0.7 to 0.79 | Good | 79% |
| >0.8 | Excellent | 93% |

| <i>Table 3: HSI Assessment Results</i> | |
|--|------------------|
| SI Description | P1 |
| Geographic location | 1 |
| Pond Area | 0.6 |
| Pond permanence | 1 |
| Water quality | 0.67 |
| Shade | 1 |
| Waterfowl effect | 0.67 |
| Fish presence | 0.67 |
| Pond Density | 0.9 |
| Terrestrial habitat | 1 |
| Macrophyte cover | 0.8 |
| HSI score | 0.82 |
| HSI category | Excellent |

| | <p>eDNA Sampling</p> <p>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:</p> <ul style="list-style-type: none">• 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. <p>Full eDNA results are provided in Table 4. The SureScreen lab results are included in Appendix 4.</p> <p><i>Table 4: eDNA Survey Results</i></p> <table border="1"><thead><tr><th>Pond Ref</th><th>eDNA Result</th></tr></thead><tbody><tr><td>1</td><td>Negative (0/12)</td></tr></tbody></table> | Pond Ref | eDNA Result | 1 | Negative (0/12) |
|----------|--|----------|-------------|---|-----------------|
| Pond Ref | eDNA Result | | | | |
| 1 | Negative (0/12) | | | | |

| <p><i>Foreseen Impacts</i></p> | <p>No ponds will 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 (approximately 1Ha) of grassland.</p> <p>The ditch to the south of the site (Arbtech, 2023) and the pond 500m east of the site are negative for great crested newts. Therefore, there is a likely absence of great crested newts in the area.</p> <p>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.</p> <table border="1" data-bbox="455 605 1904 986"> <thead> <tr> <th data-bbox="467 612 916 727">Component</th><th data-bbox="916 612 1769 727">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 data-bbox="1769 612 1904 727">Notional offence probability score</th></tr> </thead> <tbody> <tr> <td data-bbox="467 727 916 763">Great crested newt breeding pond(s)</td><td data-bbox="916 727 1769 763">No effect</td><td data-bbox="1769 727 1904 763">0</td></tr> <tr> <td data-bbox="467 763 916 800">Land within 100m of any breeding pond(s)</td><td data-bbox="916 763 1769 800">No effect</td><td data-bbox="1769 763 1904 800">0</td></tr> <tr> <td data-bbox="467 800 916 836">Land 100-250m from any breeding pond(s)</td><td data-bbox="916 800 1769 836">No effect</td><td data-bbox="1769 800 1904 836">0</td></tr> <tr> <td data-bbox="467 836 916 873">Land >250m from any breeding pond(s)</td><td data-bbox="916 836 1769 873">0.5 - 1 ha lost or damaged</td><td data-bbox="1769 836 1904 873">0</td></tr> <tr> <td data-bbox="467 873 916 909">Individual great crested newts</td><td data-bbox="916 873 1769 909">No effect</td><td data-bbox="1769 873 1904 909">0</td></tr> <tr> <td colspan="2" data-bbox="467 909 916 954"></td><td data-bbox="1635 909 1769 938">Maximum:</td><td data-bbox="1769 909 1904 938">0</td></tr> <tr> <td colspan="2" data-bbox="467 954 916 986">Rapid risk assessment result:</td><td colspan="2" data-bbox="1298 954 1724 986">GREEN: OFFENCE HIGHLY UNLIKELY</td></tr> </tbody> </table> <p>Given this, it is deemed that precautionary working methods are acceptable to ensure risk to amphibians remains at an acceptably low level.</p> | 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) | No effect | 0 | Land >250m from any breeding pond(s) | 0.5 - 1 ha lost or damaged | 0 | Individual great crested newts | No effect | 0 | | | Maximum: | 0 | Rapid risk assessment result: | | 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 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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) | No effect | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Land >250m from any breeding pond(s) | 0.5 - 1 ha lost or damaged | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Individual great crested newts | No effect | 0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Maximum: | 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| Rapid risk assessment result: | | GREEN: OFFENCE HIGHLY UNLIKELY | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p><i>Recommendations</i></p> | <p>A precautionary working method will be implemented for common amphibians during construction, including the following measures:</p> <ul style="list-style-type: none"> • Existing debris piles will be cleared by hand, outside of the amphibian hibernation season (November to February) | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|--|---|
| | <ul style="list-style-type: none">• Heras fencing will be erected to separate the working area from the ditch at the south of the site, to prevent encroachment towards aquatic habitat where common amphibians could be present.• 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 <7cm for the duration of construction to deter amphibians from the working area.• 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 (ditch to the south of the site) 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 advise must be sought from a suitably qualified ecologist.• The addition of one hibernaculum within the vegetated area, adjacent to the ditch at the south of the site. This will be created using natural materials such as logs collected from the site, stone, vegetation arisings, and earth to provide additional refugia opportunities for GCN post-development |
|--|---|



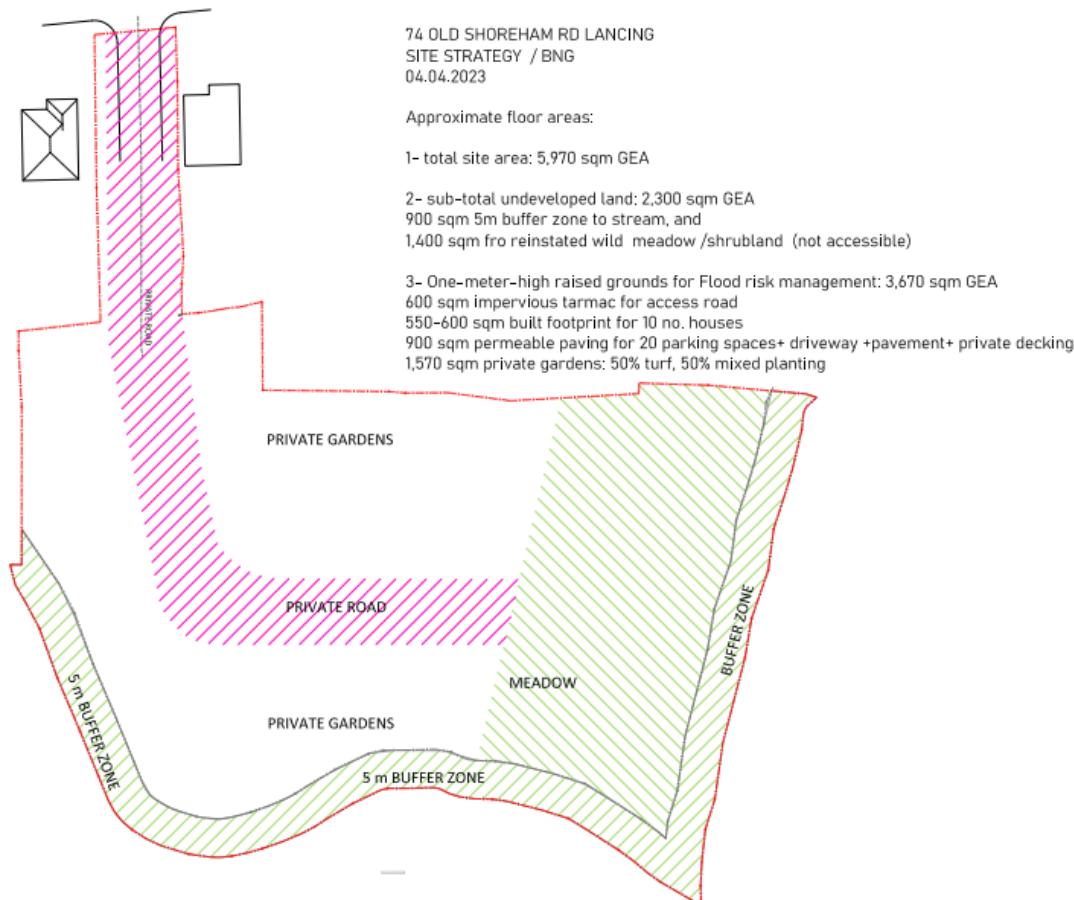
Appendix 1: Surveyed Ponds



Appendix 2: Location map



Appendix 3: Proposed plan



Appendix 4a: eDNA results - Pond

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 9933 | BN15 9HG - P1 | | Pass | Pass | Negative | 0/12 |

Matters affecting result: none

Reported by: Jennifer Higginbottom

Approved by: Jennifer Higginbottom

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

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 analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 03/07/2023

Date Reported: 04/07/2023

Matters Affecting Results: None

| Lab Sample No. | Site Name | O/S Reference | SIC | DC | IC | Result | Positive Replicates |
|----------------|---|-------------------|------|------|------|----------|---------------------|
| 0857 | Land off 74 Old Shoreham RD - BN15 9HG | TQ 19063 05592 | Pass | Pass | Pass | Negative | 0 |

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.

Limitations and Copyright

Limitations

The pond 500m east of the site was surrounded by dense vegetation. As such, only 20% of the waterbody could be accessed for the eDNA survey. This is not anticipated to impact the results, given waterflow present throughout the entire waterbody.

Legal

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| Version control | | | | |
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| Draft | 0.1 | Chantae Bleakman-Wells BSc (Hons), MSc, MRSB – Consultant Ecologist Great Crested Newt Licence: 2025-13005-CL08-GCN | | 30/06/2025 |

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|-------|-----|---|------------|
| Final | 1.0 | Chantae Bleakman-Wells BSc (Hons), MSc, MRSB – Consultant Ecologist Great Crested Newt Licence: 2025-13005-CL08-GCN. | 01/07/2025 |
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