Stantec

Llandyfaelog Substation

Great Crested Newt Report

On behalf of National Grid

nationalgrid

Great Crested Newt Report

Llandyfaelog

October 2025

Prepared for:
National Grid Electricity Transmission

Prepared by:
Stantec UK Ltd. and Keystone Ecology

Project Number:
331201429

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
1	First Issue	WC	05/08/25	HM	20/08/25	JG	26/09/25
2	Second Issue, update following client comments	HM	23/10/25	-	-	LB	29/10/25

The conclusions in the Report titled **Great Crested Newt Report** are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from National Grid Electricity Transmission (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by: _____

Signature

Will Coles

Printed Name

Reviewed by: _____

Signature

Jamie Glossop

Printed Name

Approved by: _____

Signature

Lucy Bankhead

Printed Name

Contents

Figures

Appendices

Executive Summary

Stantec UK Ltd. were commissioned by National Grid Electricity Transmission to assess the presence or likely absence of great crested newt *Triturus cristatus* at Llandyfaelog, Carmarthenshire (hereafter 'the Site') for proposed Llandyfaelog substation. The purpose of the assessment was to inform the Ecological Impact Assessment for the proposed development.

The assessment involved a desk study and environmental DNA (eDNA) survey. Biological records were obtained from the West Wales Biodiversity Information Centre (WWBIC), the DataMapWales "Potential Habitat for Great Crested Newts" layer[1] was reviewed and a search for ponds within 250 m of the Site was undertaken. The eDNA survey was undertaken in accordance with the Biggs *et al.* (2014) protocol.

The desk study identified three waterbodies within 250 m of the Site. No records of great crested newts were returned from WWBIC, and no suitable terrestrial habitat was identified within 250 metres of the Site within the DataMapWales "Potential Habitat for Great Crested Newts" layer.

During the eDNA survey of the three waterbodies identified during the desk study, only one (Pond 1) held sufficient water for sampling. Pond 1, and the results confirmed the absence of great crested newt DNA. The other two ponds were either dry or inaccessible due to dense vegetation and were assessed as having low suitability for the species due to their small size, likely ephemeral nature and limited connectivity.

Based on the desk study and eDNA results, the likelihood of great crested newts being present within the Site is considered negligible. No further survey or mitigation is recommended in relation to great crested newts, and the proposed development is unlikely to result in impacts to this protected species.

[1] https://datamap.gov.wales/layers/geonode:GWC21_Great_Crested_Newts

1 Introduction

1.1 Overview

1.1.1 Stantec UK Ltd. were instructed by National Grid Electricity Transmission to undertake a desk study and great crested newt *Triturus cristatus* environmental DNA (eDNA) survey of ponds within 250 m of land at Llandyfaelog, Carmarthenshire (Ordnance Survey grid reference SN 419 132) (hereafter 'the Site') to determine the presence/likely absence of great crested newts.

1.1.2 The purpose of this report is to inform an Ecological Impact Assessment of proposals to construct a new substation and associated infrastructure.

1.2 The Site and Survey Area

1.2.1 The Site for the proposed Llandyfaelog substation comprises agricultural grassland fields bound by hedgerows with an area of ancient woodland to the south of the Site. The Survey Area for the great created newt surveys encompassed the Site plus a 250 m buffer.

1.2.2 Appendix A, Figure 1 shows the boundaries of the Site and the Survey Area.

1.3 Proposed Development

1.3.1 The proposed development is comprised of the following principal elements:

- Construction of a single level platform (260 metres (m) by 640 m) on which an Air Insulated Substation (AIS) is sited measuring 155 m by 602 m.
- Bellmouth access to the A484 with an operational access road to connect the platform to the A484.
- Modification works to the existing 400kV Overhead Line (OHL) to connect the substation to the existing OHL involving the installation of two new towers (pylons) and one replacement tower (pylon) circa 18 m and 62 m.
- Associated drainage, and hard and soft landscaping.

1.4 Legislation

1.4.1 Great crested newts receive protection under the following legislation:

- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended); and
- Environment (Wales) Act 2016.

1.4.2 Please see Appendix B for a summary of the protection great crested newts receives under this legislation.

1.5 Aims and Objectives

1.5.1 The Great Crested Newt Mitigation Guidelines (English Nature, 2001) together with Natural Resources Wales (NRW) advice and the technical protocol for environmental DNA (eDNA) analysis (Biggs *et al.,* 2014) set out recognised approaches for establishing the presence of great crested newt. These guidelines confirm that where suitable aquatic habitat is present,

eDNA sampling of ponds provides a reliable and proportionate means of detecting the species, reflecting breeding activity within the current season.

1.5.2 The guidance makes clear that while eDNA surveys are highly effective for confirming presence/absence, they cannot be used to estimate population size or classify population status. Where population assessment is required, traditional methods (torchlight surveys, bottle trapping, egg searches and netting) must be employed.

1.5.3 The aim of the eDNA survey was therefore to establish whether great crested newts are present within waterbodies within 250 m of the Site. Results provide a baseline to inform the Ecological Impact Assessment and, where necessary, the requirement for further survey or mitigation.

2 Methods

2.1 Overview

2.1.1 A desk study and great crested newt eDNA analysis were utilised to assess the habitat value and confirm presence or likely absence of great crested newt.

2.2 Desk Study

2.2.1 West Wales Biodiversity Information Centre (WWBIC) were contacted in May 2025 for biological records within 2 km of the Site. These records were filtered for relevant great crested newt records within the past 10 years.

2.2.2 Habitat within 250 m of the Site with potential to support great crested newts was identified using DataMapWales “Potential Habitat for Great Crested Newts” layer[2]. The dataset provides mapped waterbodies and modelled habitat suitability across Wales, supporting early-stage identification of ponds that may require further survey.

2.2.3 A search for waterbodies within 250 m of the Site was undertaken. This search radius is considered proportionate to the likely terrestrial dispersal range of the species and is consistent with the approach recommended in *Great Crested Newt Mitigation Guidelines* (English Nature, 2001) and NRW technical advice.

2.3 eDNA Analysis

2.3.1 The great crested newt eDNA analysis of waterbodies within 250 m of the Site was undertaken in accordance with the methodology described in Biggs *et al.*, 2014. Water samples were collected on 18 June 2025, within the optimal survey period (i.e., between mid-April and the end of June). Surveyors collected 30 millilitres (ml) of water samples from twenty locations scattered along the margins of the waterbody using a sterile ladle. The samples were collected without entering or touching the water, to prevent contamination, such as by sediments/silts at the base of the waterbody. The surveyors used a ladle to gently agitate the water and mix the water column, whilst taking care not to disturb any sediment/silts, before collecting each sample. The samples were then emptied into a sterile plastic bag and homogenised by gently shaking the bag to ensure that any eDNA was evenly mixed through the sample. A pipette was then used to transfer six 15 millilitre (ml) sub-samples of the water from the bag into sterile tubes containing 35 ml of ethanol to preserve the eDNA samples.

2.3.2 The samples were stored in a refrigerator before being couriered to SureScreen Scientifics for laboratory analysis using the quantitative Polymerase Chain Reaction (qPCR) eDNA test.

2.4 Limitations

2.4.1 One waterbody did not hold sufficient water at the time of survey to enable collection of water samples. Another waterbody was suspected dry but was also impossible to access due to dense scrub surrounding the waterbody. It is not known whether these waterbodies are permanently dry or whether their lack of water at the time of survey was due to unusually dry weather in spring and summer 2025.

2.4.2 Given the clustering of the three waterbodies in close proximity and within one field, it is likely that if great crested newt were present in one waterbody, they would be present in all three. Therefore, the fact that two of the three ponds were not able to be surveyed is not considered a significant limitation to the outcomes of this survey.

[2] https://datamap.gov.wales/layers/geonode:GWC21_Great_Crested_Newts

3 Results

3.1 Desk Study

3.1.1 No records of great crested newts were returned by WWBIC within the search radius.

3.1.2 A review of aerial imagery and OS Mapping identified three waterbodies within 250 m of the Site boundary. All three ponds were located to the south-east of Crugan Fach, to the south of the Site (see Figure 1). No ponds are located within the Site and all ditches were either dry or held running water unsuitable for breeding great crested newt.

3.1.3 No areas of habitat were identified through the DataMapWales dataset ("Potential Habitat for Great Crested Newts") within 250m of the Site boundary.

3.1.4 The three waterbodies are described as follows:

- Pond 1: approximately 90 m^2 in size, lying directly to the south of a hedgerow. The pond held water, but its banks were poached by cattle, and no aquatic, submergent, emergent or marginal plants were recorded.
- Pond 2: lied adjacent to and directly to the east of pond 1. The pond held a small amount of water at its western end, although this was insufficient to take samples for the purpose of the eDNA survey (see following section). A large amount of the area of the pond was vegetated with a mix of perennial vegetation, including bramble *Rubus fruticosus* agg., creeping buttercup *Ranunculus repens* and soft rush *Juncus effusus*.
- Pond 3: lied on a steep slope south-east of ponds 1 and 2 and was completely surrounded by bramble scrub. From what was visible, it was assumed that the pond was dry.

3.2 eDNA

3.2.1 Pond 1 was sampled for eDNA analysis on 18 June 2025 in accordance with the technical protocol (Biggs *et al*., 2014).

3.2.2 The results of the eDNA analysis are provided in Appendix C and mapped on Appendix A, Figure 2. The analysis confirmed absence of great crested newt eDNA in the sampled pond. Laboratory controls confirmed that water samples collected were free from contamination, and the results are therefore considered reliable.

3.2.3 The two remaining ponds were not sampled. Assessment of their potential suitability indicates low value for great crested newts due to small size, likely ephemeral nature and limited connectivity. Further detail is provided in Section 2.4(Limitations).

3.3 Summary Evaluation

3.3.1 The desk study and pond search identified three ponds within 250 m of the Site. eDNA analysis of the most suitable pond (Pond 1) returned a negative result. The two other ponds were of low suitability for great crested newts and are unlikely to support breeding populations.

Taking account of the limitations of the method (Section 3.5), the likelihood of great crested newts being present within 250 m of the Site is considered negligible.

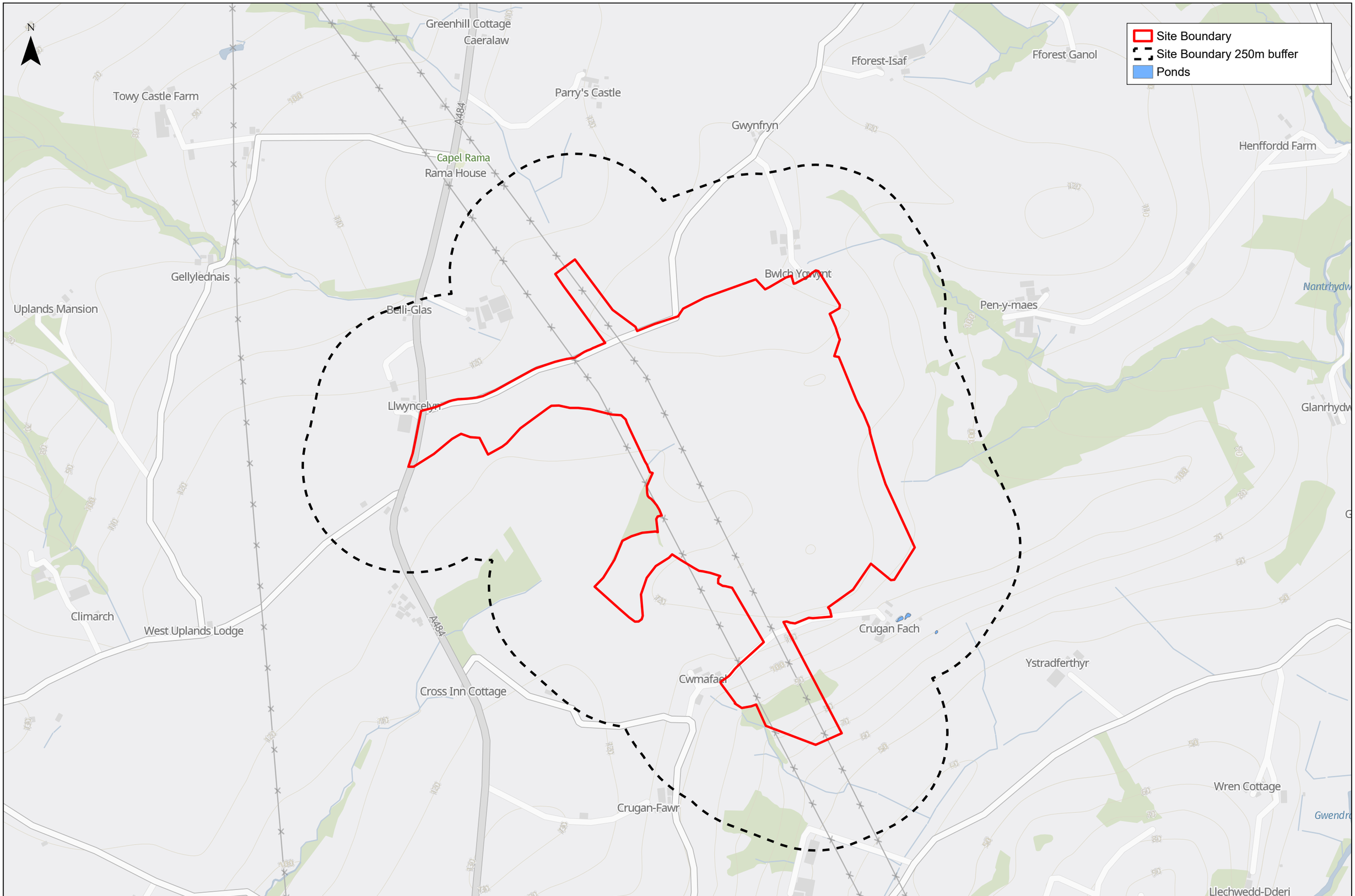
4 References

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA. Freshwater Habitats Trust, Oxford.

English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough

Appendix A Figures

Figure 1 Site and Survey Area



Stantec

Client
National Grid Electricity Transmission

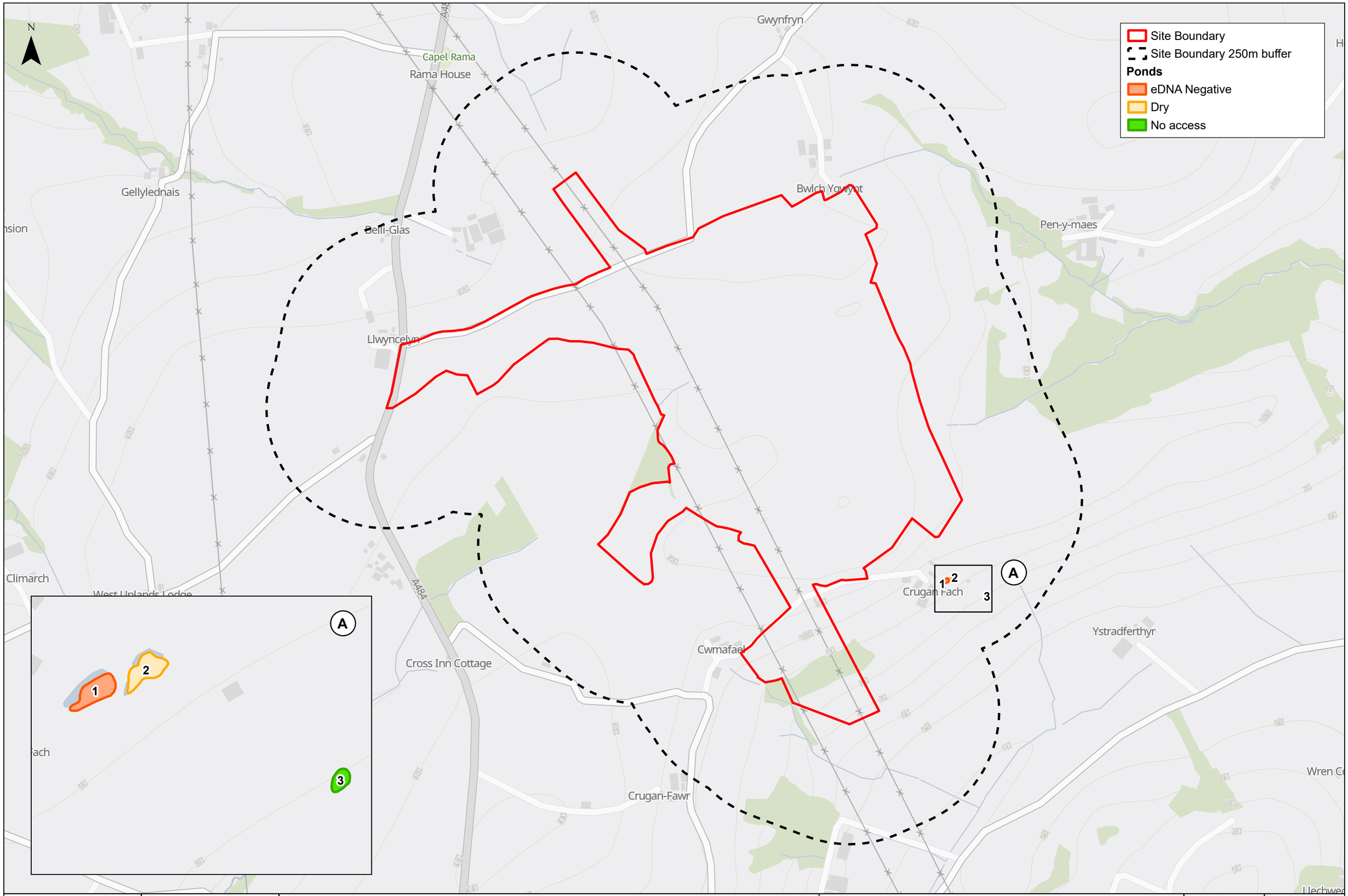
Llandyfaelog Great Crested Newt Report
Site and Survey Area

0 400 800 m

1:8,000 @ A3	Date: 23/09/2025
Drawn: MJ	Checked: MH
Figure: 1	Rev: 01

Document Path: S:\BSG_Projects\Stantec_UK\Llandyfaelog_GIS Support_Figures\Process\Aprx\Great Crested Newt Report\Great Crested Newt Report.aprx

Figure 2 eDNA Survey Results



Client
National Grid Electricity Transmission

Llandyfaelog Great Crested Newt Report
eDNA Survey Results

0 350 700 m

1:7,000 @ A3	Date: 23/09/2025
Drawn: MJ	Checked: MH
Figure: 2	Rev: 01

Document Path: S:\BSG_Projects\Stantec_UK\Llandyfaelog_GIS Support_Figures\Process\Aprx\Great Crested Newt Report\Great Crested Newt Report.aprx

Appendix B Legislation

B.1.1 Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

B.1.2 Great crested newt is protected under the Conservation of Habitats and Species Regulations 2017 (as amended), and the Wildlife and Countryside Act 1981 (as amended).

B.1.3 This legislation makes it an offence to:

- deliberately capture or kill a great crested newt;
- intentionally or recklessly disturb a great crested newt;
- deliberately take or destroy the eggs of a great crested newt;
- intentionally or recklessly obstruct access to any structure or place a great crested newt uses for shelter or protection; and
- damage or destroy a breeding site or resting place of a great crested newt.

B.1.4 In the case of *Vivienne Morge vs. Hampshire County Council* (2010), the Supreme Court has defined deliberate disturbance as 'an intentional act knowing that it will or may have a particular consequence, namely disturbance of the relevant protected species.'

B.1.5 EPS licences can be granted by NRW in respect of development to permit activities that would otherwise be unlawful under the Habitats Regulations, providing that the following three tests (set out in the EC Habitats Directive) are passed:

- the development is for imperative reasons of overriding public interest;
- there is no satisfactory alternative; and
- the derogation is not detrimental to the maintenance of the populations of the species concerned at a favourable conservation status in their natural range.

B.1.6 Section 6, Part 1 of the Environment (Wales) Act 2016 places a duty (the S6 duty) on public authorities to seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems. Section 7 of the Act replaces section 42 of the NERC Act 2006, and requires Welsh Ministers to publish, review and revise lists of species and habitats in Wales, which are of key significance to sustaining and improving biodiversity in relation to Wales, and which require Welsh Ministers to take all reasonable steps to maintain and enhance. Great crested newt is included in the species list.

B.1.7 Under Regulation 9(3) of the Habitats Regulations, Planning Authorities also have a legal duty to 'have regard to the requirements of the Habitats Directive in the exercise of their functions.' As demonstrated by the case of Woolley vs. Cheshire East Borough Council and Millennium Estates Ltd (2009), this means that they must consider the three Habitats Directive tests (see above) when determining whether Planning Permission should be granted for developments likely to cause an offence under the Habitats Regulations. As a consequence, Planning Applications for such developments must demonstrate that the three tests will be passed.

Appendix C Great Crested Newt eDNA Results

Folio No:	2856-2025
Purchase Order:	25/16256
Contact:	Keystone Environmental Limited
Issue Date:	08.07.2025
Received Date:	24.06.2025

GCN Report

Technical Report

SureScreen Scientifics

Folio No: 2856-2025
Purchase Order: 25/16256
Contact: Keystone Environmental Limited
Issue Date: 08.07.2025
Received Date: 24.06.2025

SureScreen Scientifics

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 6991	Llandy Fae log - P1	SN 423 128	Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Amy Bermudez

Approved by: Lauryn Jewkes

Folio No:	2856-2025
Purchase Order:	25/16256
Contact:	Keystone Environmental Limited
Issue Date:	08.07.2025
Received Date:	24.06.2025

SureScreen Scientifics

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.