Appendix 8E
CSA Environmental (2024d). Great Crested Newt Report - Foel Trawsnant Wind Farm, Maesteg

Great Crested Newt Report

November 2024

Foel Trawsnant Wind Farm, Maesteg

Prepared by
CSA Environmental

On behalf of
Fisher German

Report No: CSA/7086/02

CSA environmental

masterplanning | ecology | landscape | heritage

Report Reference	Date	Revision	Prepared by	Approved by	Comments
CSA/7086/02	26/11/2024		GG	CSm	

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1.0 INTRODUCTION

1.1 This report has been prepared by CSA Environmental on behalf of Fisher German. It sets out the findings of great crested newt *Triturus cristatus* survey work for Foel Trawsnant Wind Farm (hereafter referred to as 'the Site). Overhead and underground power lines for a new 66kv electricity line are proposed at the Site, for which outline permission for a Development of National Significance will be sought.

2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE

2.1 Great crested newts are legally protected as European Protected Species (EPS) under Regulation 43 of the Conservation of Habitats and Species Regulations 2017. These Regulations make it an offence to:

- Deliberately capture, injure, kill or capture a great crested newt
- Deliberately disturb great crested newts, impairing their ability to survive, breed, reproduce or rear/nurture their young
- Damage or destroy a breeding site or resting place used by a great crested newt

2.2 Great crested newts are also fully protected under the Wildlife & Countryside Act 1981 (as amended), making it an offence to:

- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place of shelter or protection
- Intentionally or recklessly obstruct access to any structure or place of shelter or protection

2.3 Disturbance of great crested newts is covered by both the 2017 Regulations and the 1981 Act. Disturbance that impairs survival or successful reproduction would be covered by the Regulations, while less significant acts of disturbance may only be covered by the Act.

2.4 It is important to note that great crested newts and their habitats (such as breeding ponds) are protected throughout the year, regardless of whether or not newts are present at the time.

2.5 Great crested newts are also listed as a species of principal importance for the conservation of biodiversity in Wales, under Section 42 (S42) of the Natural Environment and Rural Communities (NERC) Act 2006. The S42 species list is used to guide decision-makers, including planning authorities, in implementing their duty under Section 40 of the NERC Act to have regard to the conservation of biodiversity in Wales, when carrying out their normal functions.

Licensing

2.6 Where development is proposed that would result in an offence under the Habitats and Species Regulations, a statutory derogation licence may be granted by Natural Resources Wales to permit an act that would otherwise be unlawful. To obtain an EPS licence for development, it must be demonstrated that the purpose of the act to be licensed is for:

- "preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment" (Regulation 55(2)(e))

2.7 In addition, Natural Resources Wales will not grant an EPS licence unless they are satisfied that:

- "There is no satisfactory alternative" (Regulation 55(9)(a))
- "The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" (Regulation 55(9)(b))

3.0 METHODS

Desk Study

3.1 As Natural Resources Wales does not have specific published guidelines for assessing great crested newts in Wales, Natural England's Great Crested Newt Mitigation Guidelines (2001) were used. A desktop search was undertaken in May 2024 to identify ponds within 500m of the Site which may have potential to support breeding great crested newts, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography. 500m is the generally accepted typical maximum dispersal range of this species, with great crested newt most likely to use terrestrial habitat within 250m of breeding ponds.

Habitat Suitability Index (HSI) Assessment

3.2 Where ponds were situated within a 500m radius and connected to the Site by traversable terrestrial habitats, access permission was requested to undertake a Habitat Suitability Index (HSI) assessment, using the standard approach set out by Oldham *et al*. (2000). These assessments were undertaken on 24 June 2024 by Becca King and Georgina Gard. Pond locations and references are shown on the Pond Search Plan in Appendix A.

Environmental DNA (eDNA) Sampling

3.3 Environmental DNA (eDNA) sampling was used to determine the presence/ likely absence of great crested newts within ponds P5, P6, P8 and P9. This method has been shown to be highly effective in detecting the presence of great crested newts (Biggs et al., 2014).

3.4 Water samples were collected from ponds P5, P6, P8 and P9 on 24 June 2024 by Becca King and Georgina Gard following the recommended procedure. Appropriate biosecurity measures were taken to avoid cross contamination of great crested newt eDNA. Subsequently the samples were sent to Cellmark for DNA analysis.

<u>Limitations</u>

3.5 Landowner permission was not granted for HSI assessment and eDNA sampling of Ponds P3 and P4 on the golf course, and Ponds P2 was scoped out on the grounds of existing residential housing and industrial units forming a significant barrier to dispersal west towards the proposed route.

3.6 Ponds P1 and P7 were found to be dry, it is considered likely that these ponds dry annually during the great crested newt survey period and are as such unlikely to support breeding. Ponds P8 and P9 were however identified in the process of scoping P1 and P7.

3.7 There were no other limitations to the survey, which were conducted at an optimum time of year and in suitable weather conditions. Environmental DNA surveys were conducted according to the manufacturer's protocol for sample collection and stored appropriately.

4.0 RESULTS

Desk Study

4.1 Despite spending much of their annual lifecycle within the terrestrial environment, great crested newts are dependent upon the presence of suitable aquatic breeding habitat in order for a population to persist.

4.2 The desktop search and subsequent pond scoping visits identified nine water bodies occurring within a 500m dispersible range of the Site. These ponds are identified on the Pond Plan (CSA/7086/105 – see Appendix A). No potential breeding ponds were identified on-site during the UKHab survey.

4.3 Although no local records of great crested newt were returned from the data search, this may reflect a low survey effort rather than an absence of the species. Habitats present across the survey area are suitable to support dispersal, refuge and foraging of great crested newt.

Habitat Suitability Index (HSI) Assessment

4.4 The pond scoping exercise identified two ponds, P1 and P7, which were completely dry and therefore a HSI assessment was not undertaken. Pond P2 has been scoped out of assessment due to its location to the east of the residential area of Maesteg, which forms a significant barrier to great crested newt dispersal.

4.5 A summary of HSI scores for Ponds P5, P6, P8 and P9, alongside their distance from the survey area is given in Table 1 below. Ponds P8 and P9 were both situated within a duck enclosure comprised of hardstanding, and over 20 waterfowl were present at the time of survey. Full results of the HSI survey are included in Appendix B.

Table 1: Results of HSI calculations

Pond reference	HSI score	Suitability for great crested newts	Approximate distance / direction from survey area
P5	0.36	Poor	c. 250m west
P6	0.37	Poor	c. 340m east
P8	0.21	Poor	c. 350m east

P9	0.21	Poor	c. 350m east

Environmental DNA (eDNA) Sampling

4.6 Water samples were collected from the ponds P5, P6, P8 and P9 and send to Cellmark laboratories for eDNA analysis to determine the presence or absence of great crested newt DNA.

4.7 Negative results were returned for all four ponds. Full results of the eDNA sampling are included in Appendix C.

5.0 DISCUSSION

5.1 Access permission was not granted for ponds P3 and P4 which are situated within the adjacent golf course. As such, the presence or absence of great crested newt could not be confirmed. However, the desk study found that previous conventional survey work had been undertaken at these ponds, as part of proposals for the Y Bryn Wind Farm in 2023. No evidence of great crested newt was found at this time.

5.2 The section of the Site closest to ponds P3 and P4 relates to the underground section which will follow the pre-existing hardstanding highway, and so minimal disturbance to surrounding terrestrial habitats is anticipated. Terrestrial habitats associated with ponds P3 and P4 are therefore considered unlikely to be affected by the proposals.

5.3 Ponds P1 and P7 were dry at the time of assessment in June, and so are unlikely to support breeding populations of great crested newt.

5.4 The HSI assessment found that ponds P5, P6, P8 and P9 have poor suitability for great crested newt, and each of the ponds were negative for eDNA sampling. On balance of the results of previous survey work for Y Bryn Wind Farm, the absence of local records, the poor suitability of ponds within 500m and the negative eDNA results, great crested newts are considered likely absent within a dispersible range, and not likely to pose a constraint to development.

5.5 Precautionary working methods relating to pre-commencement searches for nesting birds and reptiles will reduce risks of harm for other amphibian species. Taking these measures and the results of the above desk study and survey work into consideration, there are no additional recommendations specific to great crested newt.

6.0 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. Oxford: Freshwater Habitats Trust.

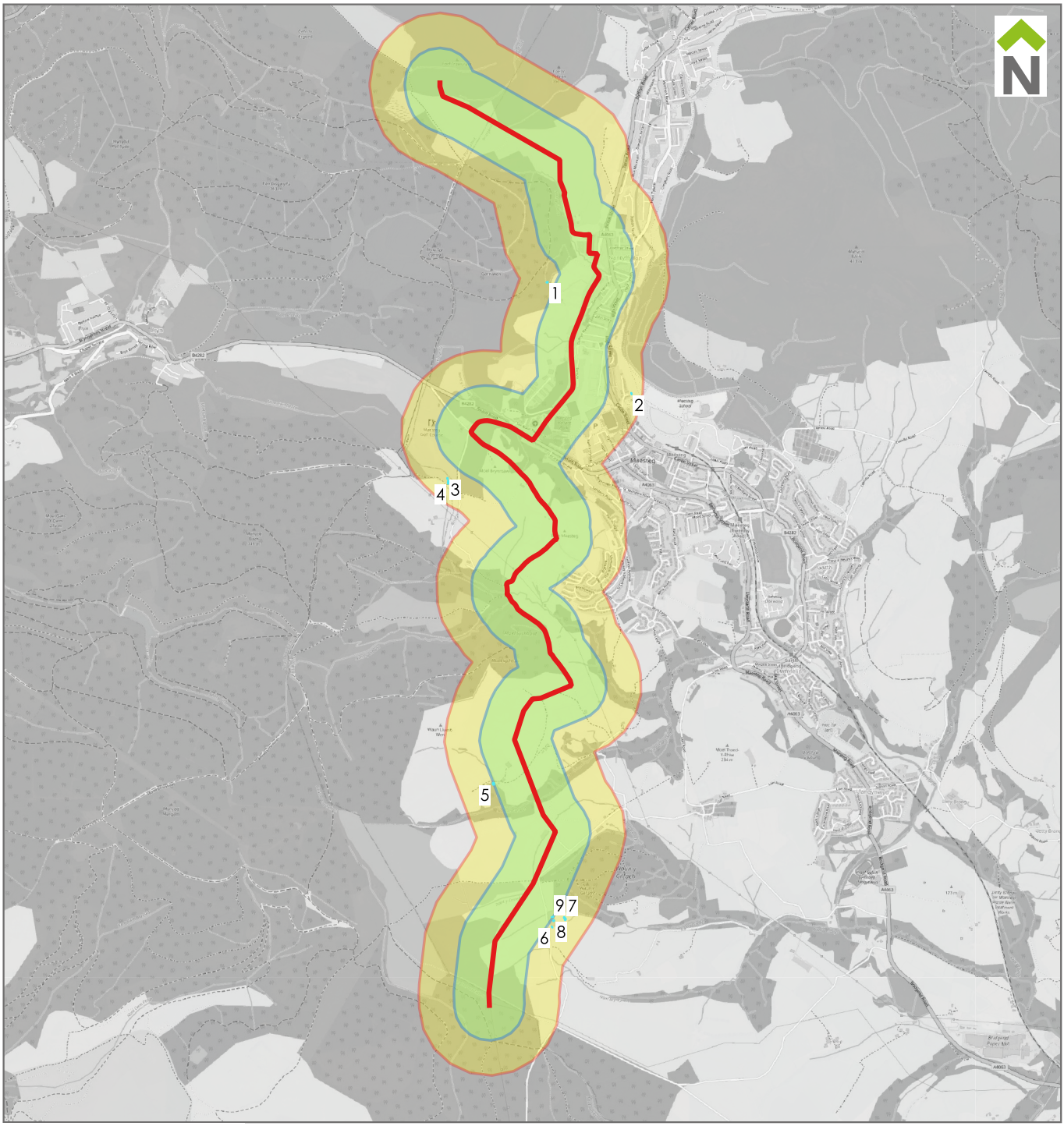
English Nature, 2001. *Great Crested Newt Mitigation Guidelines*. Peterborough: English Nature.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M., 2000. Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10(4), 143-155.

Appendix A

Pond Plan

(CSA/7086/105)



Site boundary

250m buffer

500m buffer

Ponds:

1. c. 260m north-west
2. c. 380m east
3. c. 500m west
4. c. 520m west
5. c. 250m west
6. c. 340m east
7. c. 360m east
8. c. 350m east
9. c. 350m east

0 1,000 2,000 m

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Project	Foal Trawsnant Wind Farm	Date: August 2024	Drawing No.: CSA/7086/105
Drawing Title	Pond Search	Scale: Refer to scale	Rev: -
Client	Fisher German	Drawn: GG	Checked: CSm

Appendix B

Habitat Suitability Index (HSI) Assessment Results

Habitat Suitability Factors:		Pond Number and Grid Reference			
		5	6	8	9
		SS841890	SS846879	SS846880	SS846880
Map location	Category	Zone B	Zone B	Zone B	Zone B
	SI Value	0.5	0.5	0.5	0.5
Pond area in m^2	Category	<50m2	125m2	<50m2	<50m2
	SI Value	0.05	0.25	0.05	0.05
Permanence / Desiccation	Category	Dries Annually	Rarely Dries	Never Dries	Never Dries
	SI Value	0.1	1	0.9	0.9
Water quality	Category	Moderate	Moderate	Poor	Poor
	SI Value	0.67	0.67	0.33	0.33
Percentage perimeter shade to at least 1m from shore	Category	0-60%	0-60%	0-60%	0-60%
	SI Value	1	1	1	1
Waterfowl impact (excluding moorhen)	Category	Minor	Major	Major	Major
	SI Value	0.67	0.01	0.01	0.01
Fish presence	Category	Minor	Minor	Absent	Absent
	SI Value	0.33	0.33	1	1
Number of ponds within 1km not separated by barriers	Category	0	3	3	3
	SI Value	0.1	0.65	0.65	0.65
Terrestrial habitat	Category	Good	Good	None	None
	SI Value	1	1	0.01	0.01
Percentage of pond surface occupied by aquatic vegetation (March – May)	Category	81-85%	<1%	<1%	<1%
	SI Value	0.95	0.3	0.3	0.3
Product		3.51825E-05	5.38931E-05	1.44788E-07	1.44788E-07
HSI Score		0.358618522	0.374242699	0.207048986	0.207048986
HSI Suitability		**Poor**	**Poor**	**Poor**	**Poor**

Appendix C

Environmental DNA (eDNA) Results

eDNA Technical Report

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E:

Report Reference	R0000746
Report Date	18 Jul 2024
Reported By	kmatthews

Dispatch Order Reference	P0000517
Site Name	7086/P9
Site Location	Maesteg

Barcode	Received Date	Sampled Date	Sample Check	Degradation Check	Inhibition Check	Result	Positve Replicates
GCN009237	04/07/2024	24/06/2024	PASS	PASS	PASS	NEGATIVE	0 out of 12

Dispatch Order Reference	P0000517
Site Name	7086/P5
Site Location	Maesteg

Barcode	Received Date	Sampled Date	Sample Check	Degradation Check	Inhibition Check	Result	Positve Replicates
GCN009140	04/07/2024	24/06/2024	PASS	PASS	PASS	NEGATIVE	0 out of 12

Dispatch Order Reference	P0000517
Site Name	7086/P6
Site Location	Maesteg

Barcode	Received Date	Sampled Date	Sample Check	Degradation Check	Inhibition Check	Result	Positve Replicates
GCN009222	04/07/2024	24/06/2024	PASS	PASS	PASS	NEGATIVE	0 out of 12

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eDNA Technical Report

Report Reference	R0000744
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Reported By	kmatthews

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Dispatch Order Reference	P0000517
Site Name	7086/P8
Site Location	Maesteg

Barcode	Received Date	Sampled Date	Sample Check	Degradation Check	Inhibition Check	Result	Positve Replicates
GCN009178	04/07/2024	24/06/2024	PASS	PASS	PASS	NEGATIVE	0 out of 12

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eDNA Technical Report

SUMMARY

The water samples listed in the tables above were submitted to Cellmark for environmental DNA (eDNA) testing for the presence of Great Crested Newt (GCN; *Triturus cristatus*) DNA. The laboratory testing was carried out in compliance with the guidelines described in WC1067: Analytical and methodological development for improved surveillance of The Great Crested Newt (version 1.1)

INTERPRETATION OF THE RESULTS

Barcode	Each kit is given a unique sample barcode. A kit and the six sample tubes contained within it are labelled with the same sample barcode. This allows Cellmark to track where each kit has been sent and to track the samples through the laboratory once they have been returned.
Site Name	The name of the sampling site.
OS Reference	Ordnance Survey grid reference: the location of the pond.
Sample Check	Upon receipt in the laboratory, the 6 sample tubes are scored for sample volume, leakage, damage and for the presence of sediment, algae and other debris within the sample tubes. They are scored as 'PASS' or 'FAIL'. Samples that fail at this stage may not be suitable for further processing.
Degradation Check	A control marker is spiked into the sample tubes during the kit manufacturing process. This marker is analysed for degradation and reported as 'DEGRADED' or 'PASS'.
Inhibition Check	Some substances (inhibitors) can cause the GCN assay to give a negative result despite the presence of GCN DNA. An assay is performed to determine whether inhibitors are present in the eDNA extract. If inhibition is detected, steps are taken to mitigate the effects on the GCN detection assay. The degradation assay is reported as 'INHIBITED' or 'PASS'.
Result	Results are reported as 'POSITIVE', 'NEGATIVE' or 'INCONCLUSIVE'. A positive result indicates that there is evidence that Great Crested Newts are present or have recently been present in the pond. If no GCN DNA is detected, a negative result is reported. The results are deemed inconclusive if we do not detect the presence of GCN DNA and there is an indication that something in the sample is interfering with the analysis (inhibition or degradation).
Positive Replicates	A single eDNA extract is produced for each pond. The extract is then analysed to detect the presence of GCN DNA. A total of 12 replicates of this analysis is performed per eDNA extract. If at least 1 of the replicates is positive for the presence of GCN DNA, the pond is declared positive for the presence of Great Crested Newts.

METHODOLOGY

Upon arrival in the laboratory, the 6 sample tubes are checked for sample volume, leakage and any other damage. The samples are also inspected for macroscopic debris. Based on the outcome of this inspection, the decision is made as to whether the sample is suitable for further processing. Samples that have passed this inspection step are centrifuged. The resulting pellets (containing the eDNA) from each tube are then combined. The eDNA is then isolated (extracted) from the combined pellet.

Inhibitors, more specifically PCR inhibitors, are substances in the eDNA sample which may be co-isolated with the DNA and which interfere with eDNA detection assays. All eDNA extracts are tested for the presence of inhibitors. When a sample has been shown to be inhibited and the results of the GCN detection assay are negative, we cannot be sure whether the sample is truly negative for GCN DNA or that the inhibitors have prevented the GCN assay from working correctly. In this scenario, the result is reported as inconclusive.

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eDNA Technical Report

The ability to detect a control marker that has been spiked into the sample tubes during the kit manufacturing process is also tested. If this marker cannot be detected, it suggests that that DNA in the sample has been degraded. Some possible causes of degradation can be the conditions under which the sample has been stored (eg exposure to high temperatures or UV from excessive sunlight) or contamination with substances that destroy DNA. If the control DNA is not detected but the GCN detection assay is positive for GCN, then the sample is reported as positive for GCN DNA. However, if neither the control DNA nor GCN DNA is detected, the sample is reported as inconclusive because we cannot know whether there was any GCN DNA present in the sample but it was degraded prior to analysis.

The GCN detection assay targets a portion of the GCN mitochondrial DNA. This assay is detailed in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt (version 1.1). This assay specifically detects GCN DNA. If GCN DNA is detected in at least 1 of the 12 replicate GCN detection assays, the sample is reported as positive for the presence of GCN. A technique called quantative PCR (qPCR) is used in the inhibition, degradation and GCN detection assays to detect specific regions of DNA. Positive and negative controls are used in each of the assays and these have to give the expected results in order for the sample to be declared positive or negative for GCN DNA.

Cellmark participates in the FERA proficiency testing scheme and achieved 100% in the 2021 test. Driven by quality, Cellmark has held international ISO quality certification since 1990. Cellmark provides a range of laboratory testing services accredited to ISO 17025 and although delivered to the same exacting quality standards, Cellmark's eDNA service is not yet included on the scope of its ISO 17025 accreditation. Cellmark is certified to ISO 9001, ISO 14001 and to ISO 27001.

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