Ecology

Appendix 7.6 Great Crested Newt Survey

Legislation and Conservation Status

A7.1 Great crested newts (GCN) are listed on Appendix II of the Bern Convention and on Annexes II and IV of the EU Natural Habitats Directive. In England and Wales the great crested newt is protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2018 (as amended) and under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In Scotland, great crested newts are protected under Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended).

A7.2 It is an offence, with certain exceptions, to;

- Intentionally or deliberately capture, kill, or injure GCN;
- Intentionally or recklessly damage, destroy, and disturb GCN in a place used for shelter or protection, or obstruct access to such areas;
- Damage or destroy a GCN breeding site or resting place;
- Possess a GCN, or any part of it, unless acquired lawfully; and
- Sell, barter, exchange, transport, or offer for sale GCN or parts of them.

A7.3 The legislation covers all newt life stages such that eggs, tadpoles and adult newts are all equally protected. Actions that are prohibited can be made lawful by a licence issued by the appropriate Statutory Nature Conservation Organisation. The GCN is a Priority Species under the UK Biodiversity Action Plan and has been adopted as a Species of Principal Importance in England under section 41 of the NERC Act 2006 (section 42 in Wales) and in Scotland under the Nature Conservation (Scotland) Act 2004.

Previous Records

A7.4 A search of local biological records was undertaken by North Wales Environmental Information Service (COFNOD) in December 2022 for a search radius of 2 km from the Site boundary, identifying records of great crested newt within the search area.

A7.5 The general area of Wrexham which surrounds the Site has been surveyed extensively for GCN in recent years and consultation was therefore undertaken with Wrexham's ecologist, Emma Broad, in May 2021 to establish the extent of survey effort. It was agreed that a proportionate survey effort would be to undertake a single traditional presence/likely absence survey of all ponds within and adjacent to the Site, followed by an eDNA survey.

Survey Methodology

Presence/Likely Absence Survey

A7.6 A single GCN presence/absence survey of the waterbodies within and adjacent to the Site was carried out by a pair of experienced ecologists in May 2021 in accordance with recommended guidelines (English Nature, 2001). The surveyors acted as an accredited agent under Natural Resource Wales Survey Licence reference S089282/1, with full surveyor details provided in the table below. The location of each pond is presented in **Appendix 7.7** (plan reference 13539/P04).

A7.7 Each waterbody was surveyed using three out of the following four different methods:

- Egg searching: Although the data cannot be used to estimate population size it indicates the presence of breeding adults. All suitable submerged vegetation was carefully searched for GCN eggs which are characteristically folded individually in the submerged leaves of aquatic vegetation;
- Bottle Trapping: Setting of bottle traps (where waterbody conditions allowed). This involved the use of funnel traps (made from 2 litre clear plastic bottles) that were secured in the water at 2m intervals around the margin in the evening before dark, and left overnight to be checked and any caught animals released the following morning;
- Torch survey: The accessible margins of the waterbody were slowly walked over, searching the margins by torchlight (with torches of one million candlepower) for GCN and other amphibians; and
- Netting: Nets with a rigid metal frame and a mesh of approximately 2-3 mm were used around the perimeter of the pond to net every two meters of shoreline. Netting is preferably done through aquatic vegetation in order to maximise the likelihood of catching GCN and other amphibians. This method was only used when one of the above three methods was not possible.

A7.8 All amphibians observed were counted and where possible identified to species, sex and life stage. Survey dates and weather conditions are detailed in **Table A7.6.1** below.

Table A7.6.1: GCN Survey Details

Visit	Waterbodies Surveyed	Date	Weather conditions	Air temperature during torching	Surveyors
1	1, 2, 3, 4, 5, 6, 7	17 – 18.05.2021	Wind BFS 2-3, Cloud 40%, no rain, 6/7°C overnight minimum temperature	8°C	John Moorcroft Sophie Kirk

eDNA Survey

A7.9 Following on from the presence/absence surveys, eDNA samples of ponds were undertaken on the 10th of June 2021 by Amy Sherwin (NRW GCN Licenced Surveyor Ref S089282/1) and assisted by Tasha Hesketh, who are both appropriately experienced in undertaking such surveys.

A7.10 As per guidance by the kit supplier, a total of 20 samples of water were collected from the perimeter of each pond. Due care and attention was observed during the sampling to avoid stirring up sediment and to take samples covering the full extent of the pond including clear areas of water, deeper areas of the pond and areas close to potential egg laying substrate. Samples were returned to NatureMetrics on the same/following day for analysis.

Limitations

A7.11 Pond 3 was found to be too dry for the Presence/Absence Survey to be completed, however, was holding enough water during the eDNA Survey to allow this surveys to be completed.

A7.12 At the time of the eDNA survey, Pond 7 was too dry to survey and therefore not subject to an eDNA survey.

A7.13 Limitations for the water samples and the eDNA process include the inability to access the whole perimeter of the ponds which may result in deposits of DNA being missed and the collection of residue from the pond bed into the sample tubes which could distort results.

Survey Results and Summary

A7.14 **Table A7.6.2** below presents the results of the single presence/absence survey completed on the ponds within and adjacent to the Site on the 17th/18th May 2021.

Table A7.6.2: Presence/Absence Survey Results

Pond	Torching			Trapping			Netting			Other	Eggs	Notes
No.	GCN	SN	PN	GCN	SN	PN	GCN	SN	PN	Species	Found	
1	0	0	0	0	0	0	-	-	-	-	No	
2	Too dense with leaf litter and duckweed to trap or torch-eDNA undertaken											
3	Dry											
4	0	0	0	**2M**	0	0	-	-	-	-	No	
5	0	0	**1F**	-	-	-	-	-	-	-	No	Heavy duckweed and shallow – no traps and limited torching
6	0	0	0	0	0	0	0	0	0	-	No	
7	0	0	0	-	-	-	-	-	-	-	No	Only torching undertaken, too shallow to set traps

GCN=great crested newt
SN=smooth newt
PN=palmate newt
M=male
F=female

A7.15 Two male GCN were recorded in Pond 4 but in no other ponds.

A7.16 The results of the eDNA survey can be seen in **Table A7.6.3** below.

Table A7.6.3: eDNA survey results

Pond Number	Result
1	Negative
2	Negative
3	Inconclusive (therefore assumed positive)
4	Not sampled (already confirmed positive)
5	Positive
6	Positive
7	Dry

A7.17 GCN eDNA surveys found positive results for great crested newts Pond 6 on-site and Pond 5 within 250m of the Site boundary, see **Appendix 7.7** (plan reference 13539/P04). Pond 4 was not sampled for eDNA as two male great crested newts were recorded during the Presence/Absence Survey. Even though Pond 3 was found to be dry during the Presence/Absence Survey, it returned an inconclusive results for eDNA, so as a precautionary approached, Pond 3 was also assumed positive. GCN are therefore likely to be present on-site and are present in the surrounding landscape.

A7.18 Although the results of the Presence/Absence Surveys would indicate that only a small GCN metapopulation (i.e. 1-10 individuals) exists across the ponds surveyed, based on previous surveys in the area and known GCN distribution across Wrexham, it is considered that the ponds form part of a single medium-sized metapopulation.

A7.19 The terrestrial habitat within the Site of suitability to GCN is the woodland containing Pond 6 and the connecting hedgerows through the Site and associated field margin vegetation, which also provide connectivity to the wider landscape. The majority of the Site however comprises intensive agricultural land/short-mown playing fields. Whilst GCN would not be reliant on these habitats for sustaining the metapopulation present, this species will inevitably cross such habitat when dispersing through the landscape.