

## **Great North Road Solar and Biodiversity Park**

Environmental Statement

Volume 4 – Technical Appendices

Technical Appendix A8.7 – Great Crested Newt Baseline

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# 1 INTRODUCTION

## 1.1 INTRODUCTION

- 1 This Technical Appendix (TA) presents the methods and results of a baseline study for great crested newts *Triturus cristatus* in relation to the Great North Road Solar Park (the Development).
- 2 The scope of the study was determined through a combination of a Preliminary Ecological Appraisal (PEA), comprising a desk study and site walkover, consultation with Natural England, and professional judgement with reference to prevailing good practice.
- 3 This TA includes no valuation of great crested newt or assessment of potential effects. These aspects are presented in the Ecology and Biodiversity [EN010162/APP/6.2.8] of the Environmental Statement (ES).
- 4 This TA is supported by the following appendices:
  - Appendix A – Figures; and
  - Appendix B – Survey Results.

## 1.2 LEGISLATION AND POLICY

### 1.2.1 Legislation

- 5 Great crested newts receive legal protection through the Wildlife and Countryside Act 1981<sup>1</sup> (as amended), under which it is an offence to intentionally kill, injure, or take great crested newts; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection; and intentionally or recklessly disturb great crested newts while they occupy a place used for shelter and protection.
- 6 Great crested newts are also protected by the Conservation of Habitats and Species Regulations 2017<sup>2</sup> (as amended), making it an offence to deliberately capture, kill or disturb great crested newts, and the destroy a breeding site or resting place of great crested newts (even if they are not present).

### 1.2.2 Conservation Status

- 18 Great crested newt is a species of Principal Importance in England under Section 41 of the Natural Environment and Communities Act 2006<sup>3</sup>, and a Species of Conservation Concern under the Nottinghamshire Local Biodiversity Action Plan<sup>4</sup>.

## 1.3 AIMS AND OBJECTIVES

- 19 The aim of the study is to provide a robust baseline against which the effects of the Development will be assessed. A combination of desk study and field

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<sup>1</sup> Available at: <https://www.legislation.gov.uk/ukpga/1981/69/contents> [accessed 12/05/2025]

<sup>2</sup> Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made> [accessed 12/05/2025]

<sup>3</sup> Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> [accessed 12/05/2025]

<sup>4</sup> Nottinghamshire Biodiversity Action Group (2020). Nottinghamshire Biodiversity Action Plan.

Available at: <https://nottsbag.org.uk/lbap/lbap-introduction-and-sections-1-to-6/> [accessed 12/05/2025]

surveys have been completed to meet this aim by addressing the following objectives:

- Determine the suitability of ponds to support great crested newts; and
- Establish the presence or likely absence of great crested newts in suitable ponds.

## 1.4 STUDY AREA

- 20 The Study Area for surveys included all land within the Order Limits and, where accessible, up to 250 m outside the Order Limits (Figure A8.7.1). A smaller survey radius of 50 m was defined around access routes along public highways because these will be subject to only small scale and localised construction works within the adopted highway. Written requests were made to landowners not involved in the Development for permission to access ponds on their land outside the Order Limits. The Order Limits were refined and reduced during the course of baseline studies and so a larger number of ponds than is reported here were initially scoped into the study.

## 2 METHODS

### 2.1 DESK STUDY

- 21 A desk study was undertaken to assess the nature of the surrounding habitat and obtain pre-existing ecological data and information relevant to the assessment. The desk study included the following elements:
- An assessment of aerial imagery and Ordnance Survey mapping;
  - Nottinghamshire Biological and Geological Records Centre (NBGRC) records of great crested newt within 2 km of the Order Limits (January 2024); and
  - A search of the MAGIC<sup>5</sup> website for European Protected Species (EPS) Licenses within 2 km of the Order Limits.

### 2.2 SURVEYS

- 22 The survey scope was agreed with Natural England (see TA A8.2 1 Ecology and Biodiversity Consultation [EN010162/APP/6.4.8.1]) who confirmed the following:
- A core Study Area of 250 m from the Order Limits, extending to 500 m depending on the survey results and Development impacts;
  - Habitat Suitability Index (HSI) surveys of all ponds in the Study Area; and
  - Environmental DNA (eDNA) survey of all ponds with categorised by the HSI as 'Average' or above.

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<sup>5</sup> Available at: [www.magic.gov.uk](http://www.magic.gov.uk) [accessed 12/05/2025]

### 2.2.1 Habitat Suitability

- 23 HSI surveys<sup>6,7</sup> were undertaken between 2021 and 2024 to determine the suitability of ponds to support great crested newts. The HSI score is based on quantifying 10 variables describing the characteristics of a pond, such as geographic location, shade and water quality, which is then categorised (Table A8.7.1).

**Table A8.7.1: Categorisation of HSI scores**

HSI Score	Suitability
> 0.8	Excellent
0.7–0.79	Good
0.6–0.69	Average
0.5–0.59	Below Average
< 0.5	Poor

### 2.2.2 eDNA Survey

- 24 Environmental DNA (eDNA) analysis of water samples was undertaken in May 2022 and May–June 2024 following good practice sampling protocols<sup>8</sup>. Water samples were taken from ponds with ‘Average’ suitability or above and sent to an accredited laboratory for testing. A positive result indicates the presence of great crested newt DNA from which it can be inferred that the species is present in the pond.

### 2.2.3 Population Survey

- 25 Population surveys were conducted on 13 ponds in April–June 2022 to determine their population size class. Each pond was surveyed on six occasions between mid-March and mid-June following good practice guidance<sup>9,10</sup>. The ponds selected for survey were part of an initial study and were not intended to provide a comprehensive data set. Nonetheless, the results provide useful additional data about the presence and population sizes of great crested newts.

## 2.3 LIMITATIONS

- 26 Some off-site ponds have not been surveyed because the landowners did not grant access in response to two rounds of written requests. Access to some ponds was also withdrawn or could not be reconfirmed following initial HSI surveys and so eDNA surveys could not be completed on these. Access limitations are summarised in Appendix B. A total of 86 ponds were accessed for some level of survey, providing a sound baseline for assessing the potential effects of the Development.

<sup>6</sup> Amphibian and Reptile Groups of the United Kingdom [ARG UK] (2010). Great Crested Newt Habitat Suitability Index.

<sup>7</sup> 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.

<sup>8</sup> PondNet (undated). How to collect an eDNA sample.

<sup>9</sup> English Nature (2001). Great crested newt mitigation guidelines.

<sup>10</sup> Froglife (2001). Great Crested Newt Conservation Handbook.

### **3 RESULTS**

#### **3.1 DESK STUDY**

- 27 The Order Limits comprises 84% (1,482 ha) arable fields, a terrestrial habitat of limited value to great crested newts. Discrete areas of higher value terrestrial habitats were present within the agricultural landscape, including woodland, scrub and grassland, and many of these were connected by an extensive network of hedgerows and watercourses.
- 28 Based on a review of aerial imagery and OS maps, 108 ponds were identified in the Study Area and are distributed throughout, with slightly higher densities in the west and east.
- 29 NBGRC returned six records of great crested newts, one of which was within the Study Area. MAGIC returned no granted EPS licenses or license returns for great crested newt.

#### **3.2 SURVEYS**

##### **3.2.1 Habitat Suitability**

- 30 Access was possible to 86 ponds and all of these were subject to an HSI survey, the results of which are provided in Appendix B.

##### **3.2.2 eDNA Survey**

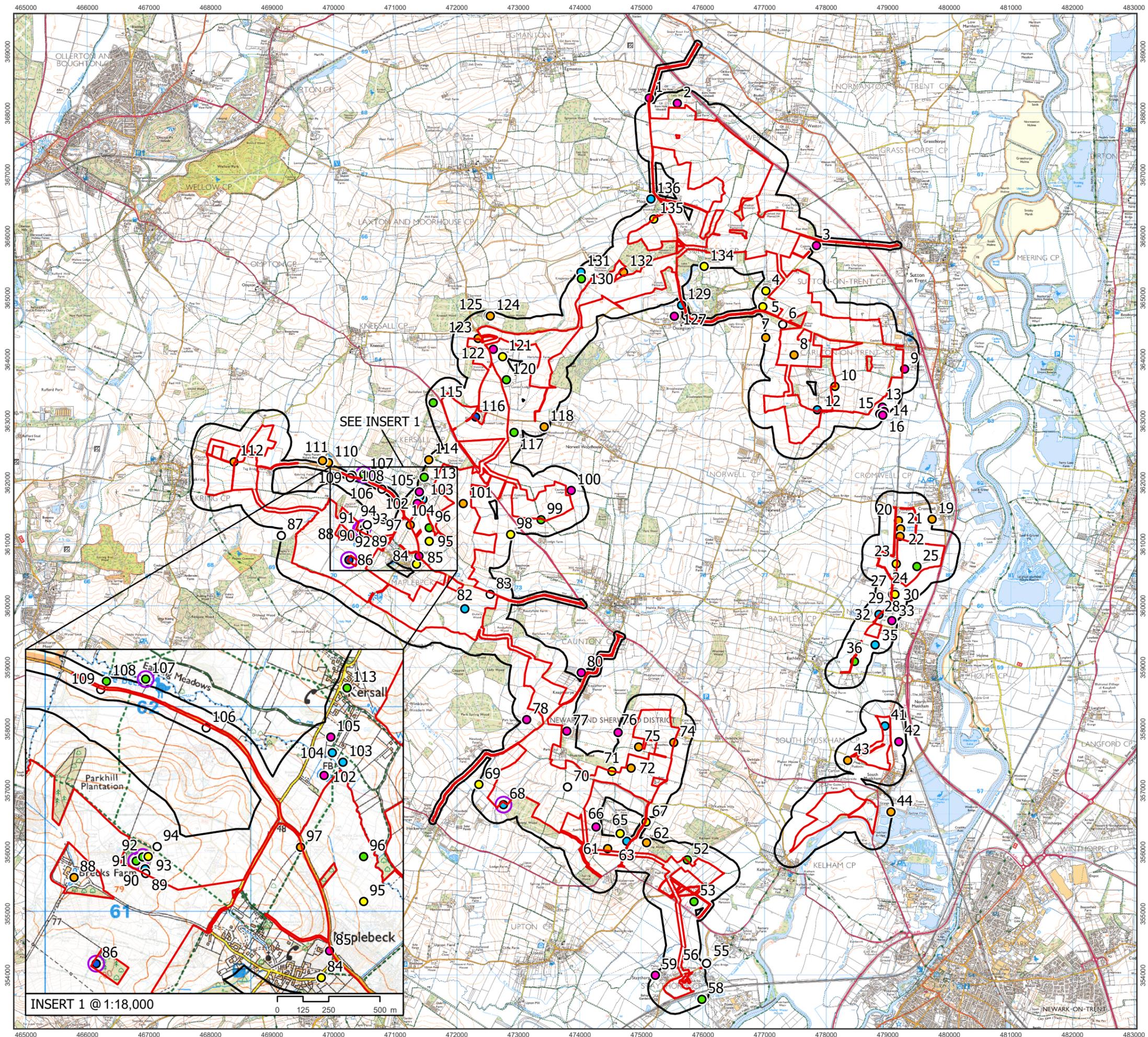
- 31 22 ponds were sampled for eDNA, of which five returned positive results (see Appendix B for details). Four of the ponds were clustered in the west of the Study Area: ponds 91 and 92 were separated by c. 35 m in a woodland surrounded by arable land; pond 86 is in a woodland 540 m to the south of these, separated by arable land; and pond 107 is 870 m to the north, also separated by arable land, in Eakring and Maplebeck Meadows Site of Special Scientific Interest.

##### **3.2.3 Population Survey**

- 32 Population surveys confirmed great crested newt populations in two ponds, both of which also tested positive for eDNA. Pond 86 supported a medium population ( $n = 32$ ; 19 adult males and 13 adult females) and eggs were also confirmed in this pond. Pond 92 supported a small population of two adult females, but no eggs were identified.



## **APPENDIX A – FIGURES**



- Order Limits
  - Great Crested Newt Study Area
  - Positive eDNA Result
- HSI Survey Results
- Excellent
  - Good
  - Average
  - Below average
  - Poor
  - N/A
  - No access

1:60,000 Scale @ A3

0 0.5 1 2 km

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**Great Crested Newt Survey Results**  
Figure A8.7.1

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Pond reference	HSI Suitability	eDNA	Population Survey	Presence	Notes
53	Average				Limited access due to dense vegetation and steep banks. Nesting swan at only accessible point.
55	N/A				Pond was dry.
56	N/A				Pond was dry.
58	Average	Negative			
59	<i>Not accessible</i>				
61	Poor				
62	Poor				
63	Good				Access no longer possible.
65	Below average				
66	<i>Not accessible</i>				
67	Below average				
68	Good	Positive		Present	
69	Below average				
70	N/A				Pond was dry.
71	Below Average		Absent		
72	Poor				
73	<i>Not accessible</i>				
74	Poor				

## APPENDIX B – SURVEY RESULTS

Pond reference	HSI Suitability	eDNA	Population Survey	Presence	Notes
1	<i>Not accessible</i>				
2	<i>Not accessible</i>				
3	<i>Not accessible</i>				
4	Below Average				
5	Below Average				
6	N/A				Pond was dry.
7	Poor				
8	Poor				
9	<i>Not accessible</i>				
10	Poor				
12	Good		Absent		
13	<i>Not accessible</i>				
14	<i>Not accessible</i>				
15	<i>Not accessible</i>				
16	<i>Not accessible</i>				
19	Poor				
20	Poor				
21	Poor				

Pond reference	HSI Suitability	eDNA	Population Survey	Presence	Notes
22	Poor				
23	Below average				
24	Below average				
25	Average	Negative			
27	Average	Negative			
28	Below average				
29	Average				No access due to dense vegetation fully surrounding pond.
30	Below average				
32	Good	Negative	Absent		
33	<i>Not accessible</i>				
35	Good	Negative	Absent		
36	Average	Negative			
40	<i>Not accessible</i>				
41	Good	Negative			
43	Poor	Negative			
42	<i>Not accessible</i>				
44	Poor				
46	<i>Not accessible</i>				
52	Average		Absent		

Pond reference	HSI Suitability	eDNA	Population Survey	Presence	Notes
75	Poor				
76	<i>Not accessible</i>				
77	<i>Not accessible</i>				
78	<i>Not accessible</i>				
80	<i>Not accessible</i>				
82	Good	Negative			
83	N/A				Pond no longer present.
84	Below Average				
85	<i>Not accessible</i>				
86	Excellent	Positive	32 (19 adult male, 13 adult female. Eggs present.)	Present	
87	N/A				Pond no longer present.
88	Poor				
89	N/A				No access due to dense bramble surrounding pond.
90	Good		Absent		
91	Average	Positive	Absent	Present	
92	Average	Positive	2 (adult females)	Present	
93	Below average				
94	N/A				Pond no longer present.

Pond reference	HSI Suitability	eDNA	Population Survey	Presence	Notes
95	Below average		Absent		
96	Average	Inconclusive	Absent		
97	Poor				
98	Below average				
99	Average				Pond was dry at time of eDNA survey.
100	<i>Not accessible</i>				
101	Poor				
102	<i>Not accessible</i>				
103	Good				Not accessed following HSI.
104	Good				Not accessed following HSI.
105	<i>Not accessible</i>				
106	N/A				Pond no longer present.
107	Average	Positive		Present	
108	Average	Negative			
109	N/A				Absent
110	Poor				
111	Poor				
112	Poor				
113	Average				No access due to steep banks.
114	Poor				

Pond reference	HSI Suitability	eDNA	Population Survey	Presence	Notes
115	Average				Pond was dry at time of eDNA survey
116	Excellent	Negative			
117	Average				Pond was dry at time of eDNA survey
118	Poor	ss			
120	Average	Negative			
121	Below average		Absent		
122	<i>Not accessible</i>				
123	Poor				
124	Poor				
125	Good	Negative			
127	<i>Not accessible</i>				
129	Good				
130	Average	Negative			
131	Good				No access due to steep banks.
132	Poor				
134	Below Average				
135	Below Average	Negative			
136	Good	Inconclusive			