

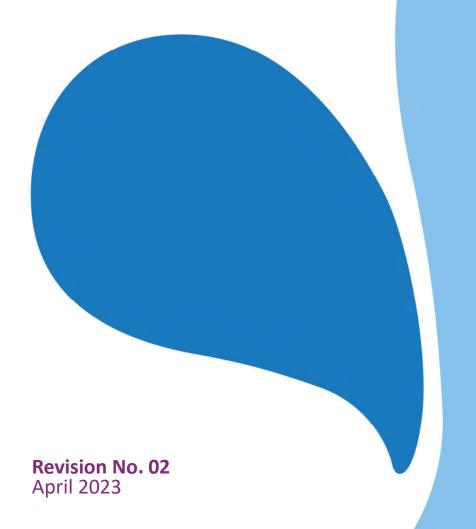
Cambridge Waste Water Treatment Plant Relocation Project Anglian Water Services Limited

Appendix 8.11: Great Crested New Baseline Technical Appendix

Application Document Reference: 5.4.8.11

PINS Project Reference: WW010003

APFP Regulation No. 5(2)a





Document Control

Document title	Great Crested Newt Baseline Technical Appendix
Version No.	02
Date Approved	28.01.23
Date 1st Issued	30.01.23

Version History

bmission
references updated to s.51 advice letter

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it



Contents

1	Inti	oduction	1
	1.1	Overview	1
	1.2	Aims and objectives of this report	1
	1.3	Project description	1
	1.4	Legislation	4
2	Me	thodology	6
	2.1	Study area	6
	2.2	Desk study	6
	2.3	Field survey	7
	2.4	Methodology limitations and assumptions	.11
3	Res	sults	. 12
	3.1	Desk study results	. 12
	3.2	Field survey results	. 13
	3.3	Survey limitations and assumptions	. 14
4	Ref	erences	15
5	Арі	pendix A	16
	5.1	Results from Cambridgeshire and Peterborough Environmental Records Centre	. 16
	5.2	Habitat suitability index results	. 17
	5.3	eDNA results	. 19

Cambridge Waste Water Treatment Plant Relocation Project Great Crested Newt Baseline Technical Appendix



Tables

Table 2-1: Waterbody suitability scores	9
Table 3-1: International and European designated sites within the study area	12
Figures	
Figure 1.1: Scheme Order Limits	3



1 Introduction

1.1 Overview

- 1.1.1 The great crested newt (GCN) surveys were carried out to inform the biodiversity assessment completed for the Proposed Development as reported in Chapter 8: Biodiversity (Application Document Reference 5.2.8). This species could be a potential constraint to the Proposed Development or influence its design and implementation.
- 1.1.2 Figures 8.79 and 8.80, which are associated with this document, can be found in the Book of Figures Biodiversity (App Doc Ref 5.3.8).

1.2 Aims and objectives of this report

- 1.2.1 A Preliminary Ecological Appraisal (PEA) was undertaken between July and September 2020 to establish the broad ecological baseline for the Proposed Development, which includes the Proposed Waste Water Treatment Plant (WWTP) and Waterbeach Pipeline, as well as surrounding areas which may be affected by the works (defined as the proposed survey area) (as presented in Figures 8.4 8.11 within the Technical Chapter Figures, App Doc Reference 5.3). Based on the findings of the PEA, habitat and protected species surveys¹ have been undertaken throughout 2021 to determine the ecological baseline. The PEA identified 164 waterbodies as being suitable for further examination for GCN.
- 1.2.2 This technical appendix presents a summary of the baseline data from GCN surveys undertaken in 2021 and within 250m of the Scheme Order Limits. It also sets out the methodology used and results of GCN surveys carried out in relation to the Proposed Development.
- 1.2.3 This report should be read in conjunction with Chapter 8: Biodiversity (App Doc Ref 5.2.8) of the Environmental Statement to which this report is appended.

1.3 Project description

1.3.1 The Proposed Development involves the construction of a new integrated waste water treatment plant (hereafter proposed WWTP) together with the associated waste water transfer infrastructure, comprising waste water transfer tunnel (underground tunnel), sewer rising main diversions and a treated effluent discharge outfall to the River Cam (the Outfall). The Proposed Development also includes a transfer pipeline corridor, the Waterbeach Pipeline, from the Waterbeach Water Recycling Centre (WRC) to the existing Cambridge WWTP. The proposed WWTP will

¹ Invasive species surveys were conducted in conjunction with other ecological receptor surveys. Target notes and annotations on maps were made when invasive species were encountered.



- incorporate an integrated Sludge Treatment Centre (STC) which would treat sludge imported from other treatment plants in the Cambridge catchment.
- 1.3.2 A detailed project description is included in Chapter 2: Project Description (App Doc Ref 5.2.2) of the Environmental Statement.
- 1.3.3 The Proposed Development is located north-east of Cambridge and is mostly comprised of arable land. The A14 and Low Fen Drove Way Country Wildlife Site (CWS) are dominant features of the landscape lying to the south and east respectively of the Proposed Development. The B1047 Horningsea Road boarders the proposed WWTP site to the west. The River Cam is west of the WWTP site and is where discharges are treated effluent will occur.
- 1.3.4 The Scheme Order Limit covers an area of approximately 211ha. The network of ditches and ponds within the Scheme Order Limits provide potential breeding habitat for GCN. There are also several areas suitable for terrestrial habitat including hedgerows, woodland and scrub. Surveys were undertaken within the Scheme Order Limits plus a 250m buffer.
- 1.3.5 Figure 1.1 below details the location of the Proposed Development and shows the Scheme Order Limits.



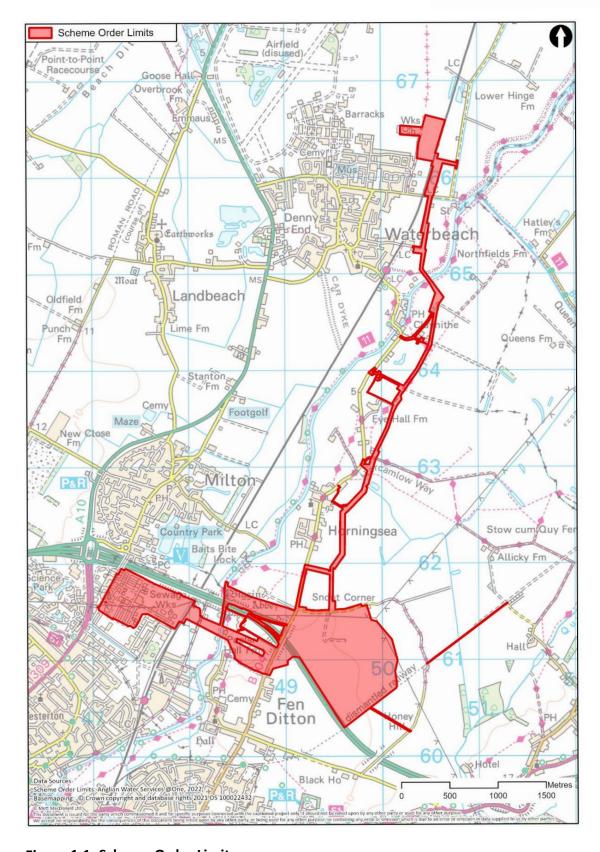


Figure 1.1: Scheme Order Limits



1.4 Legislation

- 1.4.1 GCN receive protection in the UK as a result of both legislation and planning policies. This section outlines the primary legislation protecting GCN.
- 1.4.2 GCN are protected under Annex II and IV of the EC Council Directive 92/43/EEC 1992 'Conservation of Natural Habitats and Wild Fauna and Flora' (European Commission, 1992) as a European Protected Species (EPS). The protection is afforded to all stages of the amphibians' life cycle, e.g., adults, sub-adults, eft and eggs. This legislation has been transposed into UK legislation through the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017).
- 1.4.3 Regulation 41 of The Conservation of Habitats and Species Regulations 2017 (as amended) makes it an offence to:
 - deliberately capture, injure or kill GCN or destroy their eggs;
 - deliberately disturb GCN in a way that would affect their ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species; and
 - damage or destroy a breeding site or resting place of a GCN this applies whether the newts are present or not.
- 1.4.4 In addition to the above protection, GCN in the UK are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) (HM Government, 1981). In addition to the above, it lists the following as additional offences:
 - disturbance of an animal whilst it is occupying a place, which it uses for shelter or protection;
 - obstructing access to any structure or place which an animal uses for shelter or protection; and
 - possessing or controlling any live or dead specimen or possessing anything derived from a GCN.
- 1.4.5 In order to permit a development where the above offences are likely to be committed, a European Protected Species Licence can be obtained from Natural England where appropriate mitigation is offered to offset the negative impacts to local GCN populations.
- 1.4.6 In cases where specialist ecological surveys have indicated the potential presence of GCN, but where newts themselves, or signs of newts such as eggs, have not been detected, it is essential that work is carried out in a precautionary manner in line with the legal protection of the species.



1.4.7 The purpose of the legislation is to maintain and restore GCN populations within their natural range. This implies that the habitats on which they rely and the ecology of their life cycles should not be compromised by human activities. Where activities have the potential to compromise GCN populations, measures are required to be put in place to avoid impacts or compensate for and mitigate those impacts.



2 Methodology

2.1 Study area

- 2.1.1 The desk study area covered areas within a 5km radius of the Proposed Development.
- 2.1.2 The field survey study area was a more focused area taken to be all land within the Scheme Order Limits plus surrounding land within 250m of the boundary of the Scheme Order Limits.

2.2 Desk study

- 2.2.1 A desk study was undertaken to ascertain the presence of the following with respect to GCN:
 - statutory designated sites;
 - non-statutory designated sites; and
 - GCN records.
- 2.2.2 The aim of the desk study is to collate and review existing information about a site and its surroundings to inform the design of subsequent GCN surveys and the impact assessment for the project.
- 2.2.3 An initial data search was undertaken to determine the presence of records of GCN. This data search was conducted over a 5km radius from the Scheme Order Limits; with all statutory designated sites such as Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) relevant to GCN within 10km also considered.
- 2.2.4 Information on the above features has been accessed from:
 - Multi Agency Geographic Information for the Countryside (MAGIC) (Defra, 2002);
 - aerial photography at a scale of 1:25,000;
 - Cambridgeshire and Peterborough Priority Species and Habitat Action Plans;
 - Ordnance Survey mapping (at scales of 1:50,000 and 1:25,000).
- 2.2.5 Results from a biological record search undertaken to obtain records of protected or notable species within a 5km radius of a central point (UK grid reference: TL 49740 61214) in the site for the proposed WWTP are discussed in this report. Records were



provided by the Cambridgeshire and Peterborough Environmental Records Centre (CPERC) (Cambridge and Peterborough Environmental Records Centre, 2021).

2.3 Field survey

- 2.3.1 Following the desk study and the PEA a survey programme was developed that included the following work:
 - habitat suitability index (HSI) assessments;
 - presence/absence surveys of waterbodies; and
 - environmental DNA (eDNA) testing of waterbodies.

Habitat suitability index assessment

- 2.3.2 During the PEA, suitable terrestrial habitats were also identified within the Zone of Influence (ZoI). The ZoI was within a 250m buffer of the Scheme Order Limits. Habitats found include scrub, grassland and broad-leaved woodland. These habitats provide protection from the cold in winter and from drought in summer as well as foraging opportunities for GCN.
- 2.3.3 All potential sites were assigned an HSI that uses a statistical method of assessing habitat suitability for supporting GCN (Oldham, Keeble, Swan, & Jeffcote, 2000). The assessment can be performed at any time of year, although it is best done between March and the end of September due to the need to evaluate the vegetation coverage of ponds.
- 2.3.4 Generally, ponds with a higher score are more likely to support GCN than those with a lower score and there is a positive correlation between HSI scores and ponds in which GCN are recorded.
- 2.3.5 The HSI assessment methodology is a numerical index, ranging between zero and one. One represents optimal habitat for GCN, while zero indicates unsuitable habitat for GCN. The HSI for GCN comprises 10 suitability indices (SI1 –SI10) as detailed below.
 - S|1 Geographical location: where the pond is located within the British Isles.
 The UK is divided into three zones A, B and C which illustrate decreasing potential for GCN with regard to their geographical range. The majority of England, including Cumbria, is located within Zone A, representing the most temperate climate and therefore highest potential zone.
 - S|2 Pond Area: the water surface area of a pond. In general, pond sizes between 500m² and 750m² are optimal for GCN.
 - S|3 Pond drying per decade: how often a particular pond water body dries out. The occasional drying of a pond is optimal as this reduces numbers of



predatory fish. However, permanent water retention is preferable to annual drying out.

- S|4 Water quality: the water quality is indicated by the presence of invertebrate diversity. Good water quality is optimal and measured through invertebrate diversity and the conditions of the pond.
- S|5 Shade cover: an estimate of the total shaded perimeter of a pond.
 Represented as a percentage of the bank. Unshaded ponds are preferred over those that are heavily shaded.
- S|6 Waterfowl: indications of impact by water fowl. Heavy use by waterfowl can decrease the suitability of a pond for GCN, although minor use, e.g. by moorhens, is likely to have a negligible impact.
- S|7 Fish: an indication of fish abundance. In general, greater numbers of fish result in a higher level of predation on GCN eggs and larvae and thus fewer fish in a pond increase the potential viability of a GCN population.
- S|8 Pond count: based on the density of ponds occurring within a 1km radius of a particular pond. Suitability is positively correlated with pond density.
- S|9 Terrestrial habitat: based on the availability of suitable habitat in the pond vicinity, e.g. rough grassland, scrub and woodland.
- S|10 Macrophyte cover: based on an estimate of the percentage cover by
 emergent and aquatic vegetation. The greater the proportion of the pond that
 is covered by aquatic vegetation, the more opportunities for shelter and egg
 laying by GCN. Where macrophyte cover reaches 80% or above, the effect of a
 reduction in light and oxygen reaching the deeper water can reduce the
 suitability of the pond for GCN.
- 2.3.6 The 10 field scores are converted to SI scores, on a scale from 0.01 to 1 (0.01 is used as the lower end of the scale instead of 0, because multiplying by 0 reduces all other SI scores to 0). Some of the field scores are numerical. These scores are converted to SI scores by reading off values from graphs (Biggs, et al., 2014). The 10 SI scores are then multiplied together and the tenth root of this number is calculated (x) $^{1/10}$, i.e. x to the power of 0.1.
 - HSI = $(SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}$
- 2.3.7 A total score of between one and close to zero (the calculation above does not allow the HSI to be exactly zero) is calculated and pond suitability is then determined according to the scale shown in Table 2-1 below:



Table 2-1: Waterbody suitability scores

HSI score	Waterbody suitability	
<0.5	Poor	
0.5-0.59	Below average	
0.6-0.69	Average	
0.7-0.79	Good	
>0.8	Excellent	

2.3.8 The suitability of ponds to support GCN is based on the score generated by the HSI methodology. Where this score, together with an ecological assessment of the habitats' suitability, finds ponds and associated habitats are suitable for supporting GCN, a combination of further surveys is implemented to identify presence of GCN and an estimate of population size.

Presence/absence surveys

- 2.3.9 GCN presence/absence surveys were carried out on 8 April 2021 on two suitable waterbodies. The remaining waterbodies were too shallow to carry out bottle trapping. Therefore eDNA surveys were carried out instead, which are a more efficient method of surveying.
- 2.3.10 In order to determine presence of GCN, four surveys of suitable ponds are required in line with the standard survey methodology in English Nature's GCN Mitigation Guidelines (English Nature, 2001) The surveys should include at least three of the four survey methods (netting, egg searching, torchlight and bottle trapping) unless there are valid reasons why all those methods could not be adopted. Bottle trapping, torchlight and egg searching was used on all waterbodies with an appropriate HSI score.
- 2.3.11 These surveys were only carried out in suitable weather conditions and temperatures following relevant guidance (English Nature, 2001), i.e. during periods without rain, when the air temperature is above 5°C and with little or no wind.
- 2.3.12 Weather conditions, air and water temperatures were recorded for ponds prior to commencement of the surveys and during the torchlight part of the survey.

Torchlight survey

2.3.13 This method involves surveying for GCN after dark by shining a powerful torch into the waterbody. The margin of the waterbody, where accessible, is slowly walked once as detailed in relevant guidance (English Nature, 2001). This is an efficient and effective survey method which can be used to determine population class. This method may be restricted within highly vegetated or turbid ponds.

Bottle trapping

2.3.14 This method involves using traps made from empty 2l plastic bottles, with the neck end cut off and inverted. The traps are stabilised within the waterbody using



bamboo poles with markers at the end placed around the waterbody. They are filled with water from the waterbody, making sure that there is a visible air bubble at the top of the trap so that any trapped newts can still breathe while in the trap. The inverted bottle works as a trap by allowing newts to swim in but not allowing them to swim out again. Traps are set at approximately 2m intervals; however, this is dependent on accessibility of the waterbody itself. Bottle traps are set late in the evening after the torch surveys have been undertaken. They are then left overnight and checked for occupancy early the next day.

Egg searching

- 2.3.15 This survey method involves searches for GCN eggs that have been laid on either live or dead submerged vegetation. Female GCN use their back feet to fold their eggs within leafy vegetation: this protects their eggs from desiccation and predation. It is necessary to 'unwrap' eggs from the vegetation to confirm identification of GCN eggs. Surveyors aim to unwrap a minimal number of eggs to determine the presence of GCN eggs to avoid unnecessary damage or predation that can affect the breeding success of the local population.
- 2.3.16 Once a GCN egg has been confirmed, egg searching is terminated as 'unwrapping' can also increase the risk of UV radiation damage. Egg searching is used to indicate presence/likely absence and to establish if a waterbody is used for breeding purposes, rather than to measure population size.

Evaluation methods

- 2.3.17 Evaluation of field surveys follows the methodology as outlined in the GCN Mitigation Guidelines (English Nature, 2001).
- 2.3.18 If GCN are identified in the pond during the first four surveys, the population size class needs to be estimated. This is achieved by undertaking two further surveys, following the same procedures as for presence/absence surveys. Both additional surveys need to be completed before mid-June.
- 2.3.19 It is recognised within the guidelines that it can be difficult to give an accurate account of population size. This is due to factors such as survey method constraints and therefore approximate population classes have been specified in the guidelines based on the maximum count of individuals in the water bodies. This is assumed to represent a tenth of the actual population that could be found within 500m of a waterbody.
- 2.3.20 Populations are classed as follows:
 - 'small' is for maximum counts of up to 10 adult GCN;
 - 'medium' for maximum counts of between 11 and 100 adults; and
 - 'large' for maximum counts of over 100 adults.



Environmental DNA surveys

- 2.3.21 When GCN are present in a waterbody, cells containing their DNA are released into the water. eDNA surveys involve the collection of water samples to be tested for the presence of GCN DNA which can indicate whether GCN are present or likely to be absent from the waterbody.
- 2.3.22 eDNA surveys were undertaken between 19 and 21 April, on 7 May, between 21 and 25 June 2021 and on 22 June 2022.
- 2.3.23 Twenty samples consisting of 30ml of water each were collected from the edge of the ponds and ditches by a Natural England GCN survey licence holder. The samples were then mixed, and 15ml was pipetted and added to six tubes containing a preservative. The tubes where then kept in appropriate temperature conditions and returned to ADAS for analysis. The survey followed the Natural England Protocol (Biggs, et al., 2014).
- 2.3.24 Samples were stored in accordance with the instructions provided by ADAS and returned for analysis. In all cases samples were stored in refrigerated storage or cool boxes to prevent degradation through bacterial growth or thermal action.

2.4 Methodology limitations and assumptions

- 2.4.1 Biological records obtained from third parties and presented in the desk study do not represent a full and complete species list for the area. They are mostly given by individuals on an ad hoc basis, often meaning there are areas of deficiency in the data.
- 2.4.2 HSI assessments were carried out on ditches, but HSI assessment methodology is designed for lentic water bodies (i.e. ponds, lakes and standing water). As a result, the HSI scores for ditches are a guide and the professional judgement of the appointed ecologist is required to categorise them.
- 2.4.3 HSI assessments are not always accurate. In general ponds with a higher HSI are more likely to support GCN than those with low scores. However, GCN may still be found in waterbodies classed as 'poor' within an HSI assessment (Amphibian and Reptile Groups of the United Kingdom, 2010).
- 2.4.4 Where GCN have not been identified as occupying a waterbody, this does not guarantee their absence.



3 Results

3.1 Desk study results

- 3.1.1 Desk study records are shown in Table 5.1, Appendix A.
- 3.1.2 The desk study returned three counts of GCN within 5km of the Scheme Order Limits. Records include sightings of eggs, egg laying and GCN. Data for the last ten years were included in the study as these are considered most relevant and may reflect management and development that may have occurred in the local area.
- 3.1.3 The records found are related to Adams Road Bird Sanctuary CWS 4.35km to the south-west (at its nearest position to the Scheme Order Limits), with barriers including buildings, roads and the River Cam between it and the Scheme Order Limits.
- 3.1.4 One statutory designated site (Fenland SAC) was identified in the study area, with no other statutory or non-statutory designated sites with GCN listed as a reason for designation.
- 3.1.5 Details of this designated site are shown in Table 3-1 below.

Table 3-1: International and European designated sites within the study area

Site name	Designation	Distance and direction from environmental impact assessment boundary	Reasons for designation
Fenland	SAC	8.5km north-east of the Scheme Order Limits.	Designated primarily for presence of Molinia meadows on calcareous, peaty or clayey-silt-laden soils Molinion caeruleae and calcareous fens with Cladium mariscus and species of the Caricion davallianae habitats, with spined loach Cobitis taenia and GCN also present as qualifying features.

Source: Magic Map

3.1.6 Following the PEA and using data from the desk study, a total of 164 potential sites were identified for further review. Site visits were conducted at all the 164 water bodies, where an ecological judgement was made on the suitability of waterbodies to support GCN based on the criteria listed by the HSI methodology. Where the assessment identified waterbodies and associated habitats suitable for supporting



GCN, a combination of further surveys was implemented to identify the presence of GCN and to estimate the population size.

3.2 Field survey results

Habitat suitability index assessment

- 3.2.1 Of the 164 waterbodies identified within the 250m buffer, 122 were scoped out due to being dry or having flowing water, which is not suitable for GCN. HSI assessments were carried out on the remaining 42 waterbodies located within the Scheme Order Limits plus within the 250m buffer. They consisted of ponds and ditches.
- 3.2.2 From the 42 waterbodies only four were assessed as having below average suitability. Twenty-nine waterbodies were assessed as having average suitability. Eight waterbodies were assessed as having good habitat suitability. One waterbody was assessed as having excellent habitat suitability. The results of the HSI assessments are shown in Table 5.2, Appendix A and a map of the results can be seen on Figure 8.79, Book of Figures Biodiversity (App Doc Ref 5.3.8).

Presence/absence surveys

- 3.2.3 Among the 42 waterbodies, presence/absence surveys were conducted on one pond (PD061) and one ditch (WB045). The rest of the waterbodies were too shallow to carry out bottle trapping surveys. Therefore, eDNA surveys were carried out instead, the results of which are described below.
- 3.2.4 Bottle trapping, torching and egg searching were carried out on both of these waterbodies for one visit only. Subsequent surveys were cancelled due to cold weather and then due to the drying up of both waterbodies on 20 April 2021.
- 3.2.5 PD061 is located within the WWTP site and WB045 is a ditch located to the southeast of the Proposed Development. The A14 separates WB045 from the Proposed Development and acts as a significant barrier to GCN migration.
- 3.2.6 On the single visit no GCN were identified by any of the three methods.

Environmental DNA (eDNA) results

- 3.2.7 All 42 waterbodies that were given an HSI score were selected for eDNA surveys. However, only 36 waterbodies were sampled for eDNA surveys in accordance with relevant guidance (Biggs, et al., 2014). Of the remaining six waterbodies, two were unsafe to access, two were dry at the time of sampling and two were found to be flowing which is unsuitable for GCN.
- 3.2.8 The laboratory analysis results returned one indeterminant and 35 negative results. Table 5.3, Appendix A, shows the results and a map of the results can be seen in Figure 8.80, Book of Figures Biodiversity (App Do Ref 5.3.8).



3.3 Survey limitations and assumptions

- 3.3.1 Waterbody WB045 and pond PD061 dried out too much for bottle traps to be used during the survey season. Therefore only one night of bottle trapping, egg searching, and torching was carried out. However, this is not a significant constraint as an eDNA survey was carried out on PD061 which returned a negative result. WB045 was too dry to carry out an eDNA survey, making the waterbody unsuitable for GCN.
- 3.3.2 The eDNA result for pond PD008 was indeterminate as a white precipitate had formed in the sample due to a chemical reaction between the water and the preservative solution used during eDNA testing. However, this is not considered a significant constraint because three waterbodies within 25m of this pond had negative results as well. In addition to this, the pond is relatively isolated and surrounded by arable land with very little suitable terrestrial habitat.
- 3.3.3 Although GCN are known to move up to 500m from their breeding ponds in search of feeding and hibernation sites, most will inhabit an area much closer to their pond and commonly move between ponds that are within around 250m of each other. There are also significant barriers to prevent dispersal, including busy roads, such as the A14, and the River Cam. Based on this, a 250m buffer rather than a 500m buffer was included.
- 3.3.4 Out of the 42 waterbodies identified and given an HSI score, two (WB078 and WB188) were not surveyed due to them being unsafe to access. WB078 is a large drain which runs into the River Cam. It has very little suitable aquatic vegetation and is very deep with waterfowl present, making it less suitable for GCN. Both waterbodies are surrounded by, and connected to, others which have all returned negative eDNA results. Therefore it is considered unlikely that GCN are present.



4 References

- Amphibian and Reptile Groups of the United Kingdom. (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. ARG UK.
- Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R., Foster, J., . . . Dunn, F. (2014). *Analytical and methodological development for improved surveilance of the Great Crested Newt. Defra Project WC1067*. Oxford: Freshwater Habitats Trust.
- Cambridge and Peterborough Environmental Records Centre. (2021). Retrieved from Cambridge and Peterborough Environmental Records Centre: https://www.cperc.org.uk
- Defra. (2002). Magic Map. Retrieved from DEFRA: https://magic.defra.gov.uk/
- English Nature. (2001). Great Crested Newt Mitigation Guidelines. Peterborough: English Nature.
- European Commission. (1992). *The Habitats Directive*. Retrieved from https://eurlex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31992L0043
- HM Government. (1981). *Wildlife and Countryside Act 1981*. Retrieved from UK Legislation: https://www.legislation.gov.uk/ukpga/1981/69
- HM Government. (2017). *The Conservation of Habitats and Species Regulations 2017.* Retrieved from UK Legislation: https://www.legislation.gov.uk/uksi/2017/1012/introduction/made
- Oldham, R., Keeble, J., Swan, M., & Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus Cristatus). *Herpetological Journal*, *10*, 143-155.



5 Appendix A

5.1 Results from Cambridgeshire and Peterborough Environmental Records Centre

Common name	Latin name	Location	Grid reference	Precision	Date	Comments
GCN	Triturus cristatus	Adams Road Bird Sanctuary CWS	TL437587	100m	27/03/2012	Eggs seen in pond on water speedwell Veronica anagallis- aquatica
GCN	Triturus cristatus	Adams Road Bird Sanctuary CWS	TL437587	100m	25/04/2012	Large amount of egg laying seen on submerged greater willowherb Epilobium hirsutum and water speedwell.
GCN	Triturus cristatus	Adams Road Bird Sanctuary CWS	TL437587	100m	01/05/2012	At least 12 seen in pond, including a juvenile.



5.2 Habitat suitability index results

Waterbody reference	HSI score	HSI category
PD006	0.63	Average
PD007	0.61	Average
PD008	0.65	Average
PD018	0.58	Below average
PD048	0.53	Below average
PD049	0.73	Good
PD053	0.63	Average
PD060	0.79	Good
PD061	0.65	Average
PD062	0.58	Below average
WB001	0.63	Average
WB015	0.62	Average
WB039	0.68	Average
WB043	0.67	Average
WB045	0.62	Average
WB047	0.62	Average
WB078	0.68	Average
WB083	0.70	Good
WB085	0.69	Average
WB100	0.63	Average
WB114	0.67	Average
WB118	0.64	Average
WB122	0.55	Below average
WB123	0.71	Good
WB129	0.69	Average
WB141	0.81	Excellent
WB148	0.67	Average
WB158	0.64	Average
WB159	0.64	Average
WB171	0.65	Average
WB188	0.74	Good



Waterbody reference	HSI score	HSI category
WB191	0.69	Average
WB210	0.71	Good
WB243	0.74	Good
WB244	0.68	Average
WB245	0.67	Average
WB291	0.64	Average
WB308	0.67	Average
WB314	0.66	Average
WB316	0.60	Average
WB317	0.70	Good
WB356	0.60	Average



5.3 eDNA results

Waterbody reference	Date of sample take	Result
PD006	21/06/2021	Negative
PD007	21/06/2021	Negative
PD008	22/06/2022	Indeterminate
PD018	21/06/2021	Negative
PD048	19/04/2021	Negative
PD049	21/06/2021	Negative
PD053	21/06/2021	Negative
PD060	20/04/2021	Negative
PD061	07/05/2021	Negative
PD062	07/05/2021	Negative
WB001	21/04/2021	Negative
WB015	21/06/2021	Negative
WB039	25/06/2021	Negative
WB043	20/04/2021	Negative
WB047	25/06/2021	Negative
WB085	23/06/2021	Negative
WB100	21/04/2021	Negative
WB118	19/04/2021	Negative
WB122	19/04/2021	Negative
WB123	25/06/2021	Negative
WB129	24/06/2021	Negative
WB141	23/06/2021	Negative
WB148	21/04/2021	Negative
WB158	22/06/2022	Negative
WB159	22/06/2022	Negative
WB171	21/04/2021	Negative
WB191	19/04/2021	Negative
WB210	20/04/2021	Negative
WB243	25/06/2021	Negative
WB244	19/04/2021	Negative
WB245	23/06/2021	Negative
WB291	21/06/2021	Negative
WB314	21/04/2021	Negative
WB316	21/04/2021	Negative
WB317	21/04/2021	Negative
WB356	25/06/2021	Negative



Get in touch

You can contact us by:



Emailing at info@cwwtpr.com



Calling our Freephone information line on 0808 196 1661



Writing to us at Freepost: CWWTPR



Visiting our website at

You can view all our DCO application documents and updates on the application on The Planning Inspectorate website:

https://infrastructure.planninginspectorate.gov.uk/projects/eastern/cambridge-waste-water-treatment-plant-relocation/

