2017

GREAT CRESTED NEWT SURVEY REPORT

LAND AT DOVESIDE, BARNSLEY

An assessment for the potential presence of Great Crested Newt (GCN) was undertaken on two ponds at a site in Darfield, near Barnsley.

No evidence of GCN was found, and as a result their absence from the site can be reasonably concluded.

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1.0 Introduction

Habitat Suitability Index (HSI) assessments and EDNA tests for great crested newt (GCN) were undertaken on two ponds within a site at Darfield, near Barnsley (known as Doveside, and from here on known as 'the Site'). The Site is centred on OS grid reference SE 41212 03893.

The surveys were led by Andrew Virtue, who has over 12 years' experience of undertaking surveys for GCN. He is registered to use the Natural England Class license for surveying GCN (Class Licence Class Licence Registration Number: 2016-19637-CLS-CLS). Andrew is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Legal status of great crested newts

GCN are fully protected under British and European law. They are listed on Schedule 5 of the Wildlife & Countryside Act, 1981 (as amended). They are a European Protected Species (Annex IV (a) to the Habitats Directive 1994). As a result it is an offence to:

(a) Deliberately capture or kill a wild animal of a European protected species;

(b) Deliberately disturb any such animal;

(c) Deliberately take or destroy the eggs of such an animal; or

(d) To damage or destroy a breeding site or resting place of such an animal.

2.0 Baseline Conditions

A basic desk study was carried out in 2017 to identify if GCN were in the local area. A 1 km search radius was used for the desk study. No GCN amphibians were recorded from within 1km of the site.

Table 1: List of consultees

Organisation	Source	Date	Information Obtained
Barnsley Council	Trevor Mayne, Biodiversity Officer	June 2017	GCN Records
Environment Agency	Easimap Database	January 2017	GCN Records

3.0 Assessment Methodology

Habitat Suitability Index (HSI)

As a general guide, suitable habitats within 250 m of a breeding pond are likely to be used most frequently (English Nature GCN mitigation guidelines p.27).

Aerial maps show a total of two ponds within the Site. See **Appendix 1.** Habitat Suitability Index (HSI) assessments were made on both these ponds. See **Appendix 2.**

There are also large waterbodies to the south, within the Wombwell flood storage reservoir. However, these are separated from the Site by the River Dove. This is a significant dispersal barrier to GCN and a result these ponds can be discounted. No further ponds were identified from within 250m of the Site.

Table 2: Ponds within 250m of the Site (from HSI)

Pond Number	Name	Grid Reference	Distance from Site
P1	Eastern Pond	SE4126203908	Within
P2	Western Pond	SE4115103905	Within
P3	Wombwell Ings	SE4119703662	148m to South

EDNA Testing

An EDNA test was used to confirm if GCN were present within the on-site ponds. The test was then sent to *Surescreen* for analysis. *Surescreen* are validated by Natural England as an approved supplier of EDNA test kits.

Only the smaller pond to the east of the Site (P1) was surveyed. The HSI assessments resulted in P2 having a poor score, and it was therefore discounted. In addition, the two ponds are adjacent to each other and connected by a ditch. As a result it is reasonable to assume that the small pond is representative of all ponds within the Site. If GCN were present they would be found across the Site.

The test was undertaken on 5 June 2017.

4.0 Results

The desk study suggests that GCN are not in the local area, and the ponds themselves are sub-optimal for GCN. This is mainly because they are regularly inundated with flood water from the adjacent River Dove, resulting in them containing large numbers of fish.

The HSI assessments resulted in P1 having a below average score, and P2 having a poor score. The EDNA test for P1 was negative. See **Appendix 3** for the EDNA test results.

5.0 Conclusions

A combination of HSI assessments and EDNA tests have confirmed that GCN are absent from the Site.

There were no constraints to the survey. All surveys were undertaken within recommended guidelines. As a result the absence of GCN from the site can be reasonably concluded.

These results are valid for a minimum of two years. In addition, the poor quality of the surveyed ponds and the absence of other ponds in the local area would suggest that it is very unlikely that GCN will occupy the surveyed area in the future.

6.0 References

Baker, J., Beebee T., Buckley, J., Gent, A. and Orchard, D. (2011). *Amphibian Habitat Management Handbook.* Amphibian and Reptile Conservation, Bournemouth.

English Nature (2001) *Great crested newt mitigation guidelines*. English Nature, Peterborough.

Gent & Gibson. (1998). *Herpetofauna Workers' Manual.*

Gov.UK (2016) https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence

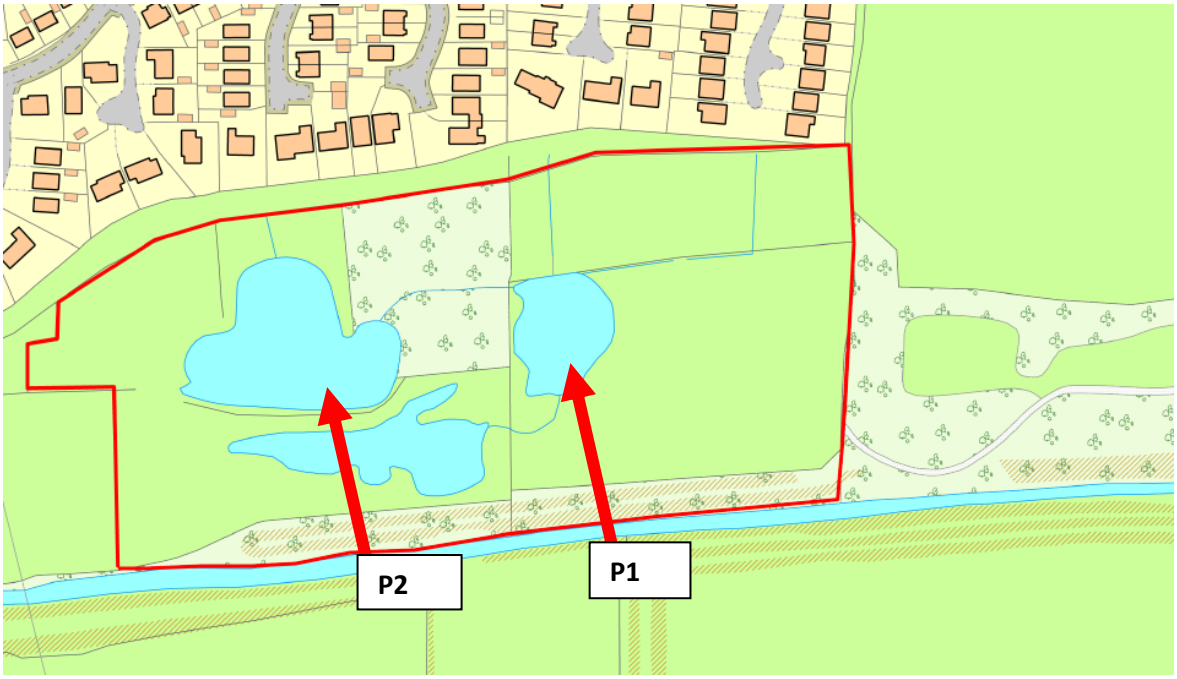
Langton, T., Beckett, C., Foster. (2001). *Great Crested Newt Conservation Handbook.*Froglife, Halesworth.

Oldham et al (2000) *Evaluating the suitability of habitat for the great crested newt (Triturus cristatus).* Herpetological Journal, Volume 10, pp. 143-155.

The Conservation of Habitats and Species Regulations 2010.

Wildlife and Countryside Act (1981). H.M.S.O. London.

Appendix 1: Ponds within 250m of Site



Appendix 2: Great crested newt Habitat Suitability Assessment (HSI)

1.0 Introduction

A habitat suitability assessment was carried out on ponds close to the Site boundary using the revised great crested newt habitat suitability index (HSI) by the National Amphibian and Reptile Recording Scheme (NARRS, 2008, based on Oldham et al, 2000).

Whilst a HSI is not a substitute for a full great crested newt survey, it does provide a very useful indication of the likely presence of great crested newts (GCN) and this combined with knowledge of the area, local records centre information and an assessment of the Site allows a reasonable estimate of the chances of great crested newts being found in and around the proposed development area.

The scoring system is a mixture of both categorical and numeral scores which are them collated to provide an overall total. Table 2 shows the resulting scoring scale. This table can help inform decisions about whether or not to survey for GCN. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores.

Oldham et al (2000) concluded that only ponds with a score of **0.5 or higher** are considered to have more than POOR potential for GCN. As a result, any ponds scoring below this figure do not generally require further survey.

All ponds within 250 m of the Site boundary were subjected to a HSI assessment, the results of which can be found at *Table 3.* For the purposes of this report the ponds have been given descriptive titles as well as pond numbers.

2.0 Methodology

Ten features are assessed under the HSI and for each feature a score of between 0 and 1 is allocated. The 10 features are described in Table 1 below, with a score of 1.0 indicating the greatest suitability for great crested newts.

Table 1: the ten features used for assessment under a HSI

Code	**Feature**
S1	Location
S2	Pond area
S3	Pond drying out/permanence
S4	Water quality
S5	Pond shading
S6	Number of waterfowl
S7	Number of fish
S8	Pond density
S9	Terrestrial newt friendly habitat
S10	Macrophyte content

Table 2: The HSI scoring scale

HSI	**Pond suitability for GCN**
<0.5	Poor
0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Figure 1: Eastern Pond (P1)

Figure 2: Western Pond (P2)

3.0 HSI Results

Pond P1 (Eastern Pond)

SI No.	Description	Results	SI Score
1	Location	England – Zone 1	1
2	Pond area	2000m2	0.8
3	Drying	Never	0.9
4	Water quality	Moderate	0.67
5	Shade	25%	1
6	Fowl	Minor	0.67
7	Fish	Major	0.01
8	Ponds	1	0.7
9	Terrestrial	Good	1
10	Macrophytes	20%	0.5
Total multiplied			0.00113128
HSI (=A1^(1/10))			0.507408
Score Category			**BELOW AVERAGE**

Pond P2 (Western Pond)

SI No.	Description	Results	SI Score
1	Location	England – Zone 1	1
2	Pond area	5400+	0.8
3	Drying	Never	0.9
4	Water quality	Poor	0.33
5	Shade	80%	0.6
6	Fowl	Minor	0.67
7	Fish	Major	0.01
8	Ponds	1	0.7
9	Terrestrial	Good	1
10	Macrophytes	20	0.5
Total multiplied			0.0003343
HSI (=A1^(1/10))			0.449173
Score Category			**POOR**

Appendix 3 – EDNA Test Results

SureScreen Scientifics

Folio No:	E1040
Report No:	1
Order No:	DV/01
Client:	Environment Agency
Contact:	Andrew Virtue
Contact Details:	andrew.virtue@environment-agency.gov.uk
Date:	12/06/2017

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS

Date sample received at Laboratory: 08/06/2017
Date Reported: 12/06/2017
Matters Affecting Results: None

RESULTS

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
32226	Doveside, Wombwell	-	Pass	Pass	Pass	Negative	0

SUMMARY

When Great Crested Newts (GCN); Triturus cristatus inhabit a pond, they deposit traces of their DNA in the water as evidence of their presence. By sampling the water, we can analyse these small environmental DNA (eDNA) traces to confirm GCN habitation, or establish GCN absence.

The water samples detailed below were submitted for eDNA analysis to the protocol stated in DEFRA WC1067 (Latest Amendments). Details on the sample submission form were used as the unique sample identity.